Tetrahedron

The International Journal for the Rapid Publication of
Critical Reviews and Original Research Communications
in Organic Chemistry and Related Disciplines, Especially
Bio-organic Chemistry
Founded jointly by Sir Robert Robinson and R. B. Woodward
Chairman of the executive board of editors for
Tetrahedron publications
Sir Derek Barton, Texas A & M University, USA

SUBJECT INDEX, AUTHOR INDEX AND VOLUME CONTENTS

Volume 50 (1994)

Pergamon

TETRAHEDRON

EXECUTIVE BOARD OF EDITORS FOR TETRAHEDRON PUBLICATIONS

Chairman: **Professor Sir Derek Barton, FRS,** Department of Chemistry, Texas A & M University, College Station, TX 77843-3255, USA (FAX: 1 409 845 7177)

Professor J. E. Baldwin, FRS, Dyson Perrins Laboratory, Oxford, OX1 3QY, UK
(FAX: 44 1865 275632)

Professor D. L. Boger, Department of Chemistry, The Scripps Research Institute, La Jolla, CA 92037, USA
(FAX: 1 619 554 6401)

Dr S. G. Davies, Dyson Perrins Laboratory, Oxford, OX1 3QY, UK
(FAX: 44 1865 275633)

Professor L. Ghosez, Laboratoire de Chimie Organique de Synthèse, Université Catholique de Louvain, B-1348 Louvain-la-Neuve, Belgium
(FAX: 32 10 47 41 68)

Professor S. Ito, Faculty of Pharmaceutical Sciences, Tokushima Bunri University, Yamashiro-cho, Tokushima 770, Japan
(FAX: 81 886 55 8774)
(Associate Editor, Professor Y. Shizuri)

Professor A. R. Katritzky, FRS, Department of Chemistry, University of Florida, Gainesville, FL 32611, USA
(FAX: 1 904 392 9199)

Professor N. K. Kochetkov, N. D. Zelinsky Institute of Organic Chemistry, Academy of Sciences, Moscow B-334, Russia
(FAX: 7 095 13 55 328)

Professor Lin Guo-Qiang, Shanghai Institute of Organic Chemistry, Academia Sinica, Shanghai 200032, China
(FAX: 86 21 4376263)

Professor S. F. Martin, Department of Chemistry and Biochemistry, University of Texas, Austin, TX 78712, USA
(FAX: 1 512 471 4180)

Professor A. McKillop, University of East Anglia, School of Chemical Sciences, University Plain, Norwich, NR4 7TJ, UK
(FAX: 44 1603 507773)

Professor W. B. Motherwell, Department of Chemistry, University College, 20 Gordon Street, London WC1H 0AJ, UK
(FAX: 44 171 380 7463)

Professor A. Nickon, Department of Chemistry, The Johns Hopkins University, Baltimore, MD 21218, USA
(FAX: 1 410 516 8420)

Professor G. Ourisson, Centre National de la Recherche Scientifique, Centre de Neurochimie, 67084 Strasbourg, Cedex, France
(FAX: 33 88 607620)
(Associate Editor, Professor G. Solladié)

Professor T. Shioiri, Faculty of Pharmaceutical Sciences, Nagoya City University, Tanabe-dori, Mizuho-ku, Nagoya 467, Japan
(FAX: 81 52 834 4172)

Professor W. Steglich, Institut für Organische Chemie der Universität München, Karlstr. 23, D-80333 München, Germany
(FAX: 49 89 5469225)

Professor H. H. Wasserman, Department of Chemistry, Yale University, PO Box 208107, New Haven, CT 06520-8107, USA
(FAX: 1 203 432 9990)

Professor C.-H. Wong, Department of Chemistry, The Scripps Research Institute, La Jolla, CA 92037, USA
(FAX: 1 619 554 6401)

Editor Tetrahedron Organic Chemistry Series: **Professor J. E. Baldwin, FRS,** Dyson Perrins Laboratory, Oxford, OX1 3QY, UK

BOARD OF CONSULTING EDITORS

F. Arcamone, Florence
D. Arigoni, Zurich
A. G. M. Barrett, London
A. R. Battersby, Cambridge
A. L. J. Beckwith, Canberra
R. G. Bergman, Berkeley, CA
R. Breslow, New York, NY
H. C. Brown, Lafayette, IN
E. J. Corey, Cambridge, MA
D. J. Cram, Los Angeles, CA
D. P. Curran, Pittsburgh, PA7
S. J. Danishefsky, New York, NY
P. B. Dervan, Pasadena, CA
P. Deslongchamps, Sherbrooke
W. von E. Doering, Cambridge, MA
J. Elguero, Madrid
A. Eschenmoser, Zurich
D. A. Evans, Cambridge, MA
B. Giese, Basel
S. Hanessian, Montreal
Y. Hirata, Nagoya
R. Huisgen, Munich
W. S. Johnson, Stanford, CA
M. Julia, Paris
V. A. Koptyug, Novosibirsk,
M. Lahav, Rehovot
J.-M. Lehn, Strasbourg
S. V. Ley, Cambridge
X. T. Liang, Beijing
P. D. Magnus, Austin, TX
M. Makosza, Warsaw
L. N. Mander, Canberra
S. Masamune, Cambridge, MA
A. I. Meyers, Fort Collins, CO
J. Michalski, Lodz
K. Mori, Tokyo
T. Mukaiyama, Tokyo
K. Nakanishi, New York, NY
K. C. Nicolaou, La Jolla, CA
T. Norin, Stockholm
R. Noyori, Nagoya
S. Nozoe, Sendai
W. Oppolzer, Geneva,
L. E. Overman, Irvine, CA
P. Potier, Gif-sur-Yvette
V. Prelog, Zurich
G. Quinkert, Frankfurt am Main
J. Rebek, Jr, Cambridge, MA
C. W. Rees, London
S. L. Schreiber, Cambridge, MA
A. I. Scott, College Station, TX
K. B. Sharpless, La Jolla, CA
H. A. Staab, Heidelberg
G. Stork, New York, NY
Sukh Dev, New Delhi
W. Tochtermann, Kiel
B. M. Trost, Stanford, CA
H. G. Viehe, Louvain-la-Neuve
E. Vogel, Cologne
P. von Ragué Schleyer, Erlangen
Y. Wang, Shanghai
K. B. Wiberg, New Haven, CT
E. Winterfeldt, Hannover
N. S. Zefirov, Moscow

FORTY-EIGHT ISSUES PER YEAR (weekly except in December)

Publishing, Subscription and Advertising Office:
Elsevier Science Ltd, The Boulevard, Langford Lane, Kidlington, Oxford, OX5 1GB (Tel: (01865) 843000; Fax: (01865) 843010)

Subscription Rates
Annual Institutional Subscription Rates 1995: North, Central and South America, U.S.$ 5975.00, Rest of World £ 4010.00. Associated Personal Subscription Rates are available on request for those whose institutions are library subscribers. Sterling prices exclude VAT. Non-VAT registered customers in the European Community will be charged the appropriate VAT in addition to the price listed. Prices include postage and insurance and are subject to change without notice. Subscription enquiries from customers in North America should be sent to: Elsevier Science Inc., 660 White Plains Road, Tarrytown, NY 10591-5153, USA, and for the remainder of the world to: Elsevier Science Ltd, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, UK Tel: (01865) 843000; Fax: (01865) 843010.
Second Class Postage Paid at Newark, NJ and additional Mailing Offices. Postmaster send address corrections to Elsevier Science Inc., 660 White Plains Road, Tarrytown, New York 10591-5153, USA.

Copyright © 1995 Elsevier Science Ltd

Subject Index 1994

Corrigenda from previous volumes
Dewar M.J.S., Yu J.Y., Jie C.:**49**, 5003 (1993): addendum to SAM1 results previously published, 627
Okide G. B.:**49**, 9517 (1993):revision to structure of lysergic acid diethylamide in figure 1, 12047
Pietrusiewicz K.M., Salamonczyk G.M., Bruzik K.S., Wieczorek W.:**48**, 5523 (1992): compd name -3,4,5,6-tetrakis-phosphate should read -1,4,5,6-tetrakis-phosphate throughout the paper, 573

Perspectives
ciguatera and its off-shoots; research into molecular structure, 3
vitamin B_{12}; discovery of nature's pathway to, 13315

Reports
β-amino acids, recent approaches to, 9517
α-amino acids, recent developments in synth, 1539
anellated heterophospholes, synth and reactivity, 7675
angiotensin II antagonist drug discovery programme, 13049
asymmetric synthesis, an industrial prospect, 3639
biocatalysis in organic solvents, aspects of, 8253
boron analogues of biomolecules, 12521
chemical and biological synth of chiral epoxides, 8895
cyclophanes, synth, 4575
electron transfer induced aromatic nucleophilic substitution, mechanisms and reactivity, 10117
fluorinated organometallics in organic synth, 2993
generation of radicals by photo-induced electron transfer and fragmentation of the radical cation, 575
organic solid state reactivity, 6441
2-oxazolines, synth and reactivity of, 2297
photosensitive artificial membranes based on azobenzene and spirobenzopyran derivs, 4039
synth of carbocyclic nucleosides, 10611

Symposia-in-print
catalytic asymmetric addition reactions, 4235
palladium in organic synthesis (complete issue 2), 285
recent progress in enediyne antibiotics (complete issue 5), 1311

Acetals
allylation of - activated by trimethylsilyl trifluoromethanesulfonate using organoborates, 871
allylic ketals, reductive cleavage by an arene-catalysed lithiation, synth of masked lithium homoenolates, 3437
cyclic and acyclic β-keto ester acetals with C_2-symmetric cycloalkane-1,2-dioxy moiety, asymmetric alkylation of, synth of enol ethers with a chiral quaternary carbon, 3315
1,4-cyclohexanedione monoethylene ketal as starting material for synth of the A, B, C and D ring fragment of diterpene stemodin, 1093
dialkyl substituted trimethylsilyl ketene acetals, reaction with aldonolactones, dimerisation of aldonolactones, 11885
dispiroketals (1,18,13,16-tetraoxadispiro-[5.0.5.4]-hexadecan-14-ones) from reaction of α-hydroxy acids with bis-dihydropyrans, subsequent reaction of the enolates with electrophiles, 7157
dithioacetals and ketals, pyrylium salt sensitised photochemical deprotections of −, 12821
hemidithioacetals and α-phosphonyl thiols, synth by reduction of phosphonodithioformates, 10277
hemiketals derived from 3,3-dimethyl-7-methylenecycloocta-1,5-dione, rearrangement of, synth of substituted cyclooctadienones and δ-valerolactones, 7461
2- and 3-hydroxy acetals from 2,3-olefinic acetals, 11057
α-hydroxyaldehyde dimethyl acetals by conversion of α-haloaldehyde dimethyl acetals into α-haloaldehyde hemiacetal acetates and subsequent methanolysis, 7898

β-hydroxydithioacetals, thermal dehydration and dethioacetalization of – with dimethyl sulfoxide, synth of αβ-unsaturated aldehydes, 5783
α-oxoketene acetals by reaction of 2,2-difluorovinyl ketones with heteroatom nucleophiles such as thiols, alcohols and amines, 11637
bis(phenylthio)acetals, reductive lithiation of – in synth of γ-(phenylthio)ketones, 11569
pyruvate acetals of carbohydrates by coupling of trialkylsilylated diols and pyruvates, 12143
silyl ketene acetals, aldolisation reactions with lactone carbonyls mediated by fluoride, 3333
silyl ketene acetals from α-siloxy esters, β-hydroxy esters and α-amino esters; application to the Ireland ester enolate Claisen rearrangement, 3099
N-silyl ketene *N,O*-acetals generated from allyl *N*-phenylimidates, Claisen rearrangement of – to yield γ,δ-unsaturated anilides, 3951
spiroketals by [4+2]-cycloadditions of 3,4-epoxy-2-methyleneoxolanes with oxadienes, 8035
see also Dioxolanes, Thioacetals

Acetogenins
from *Uvaria accuminata* (Annonaceae), structural elucidation by fast atom bombardment mass spectrometry, 8479

Acetylenes
see Alkynes

Acridines
pyrido- and pyrrolo[2,3,4-*kl*]acridines, marine related alkaloids, from β,β'-diaminoketones and a variety of cyclohexanediones and quinones, 12959

Actinides
cyclam tetrahydroxamate (CYTROX) and cyclam tetraacetonylacetone (CYTAC) chelators, design and synth as actinide specific chelators, 2657

Acylation
amino– of 2'-deoxy- and ribo-nucleosides through an enzymatic reaction with oxime aminoacyl esters, 6927
catalytic intramolecular hydroacylation of 4-substituted 4-pentenals using catalysts of the type [Rh(chiral diphosphine)]$^+$, 4335
deacylation of glyceroglycolipids to lysoglyceroglycolipids by use of *Rhizopus arrhizus* lipase, 1993
lipase-catalysed acylation with acetic anhydride in synth of 2-acyl-3-hydroxymethyl-4-butanolide, subsequent preparation of IM-2, the autoregulator from *Streptomyces* sp. FRI-5, 10849
meta acylation of anisole and its *p*-methyl or fluoro derivs, 1179
perfluoro- of cyclopropyl-containing alkenes, 775
perfluoroacylation of alkenes with trifluoroacetic anhydride, synth of trifluoromethylalkenylketones, 11023
perfluoroacylation of alkynes using trifluoroacetic anhydride activated by BF_3.SMe_2 complex, synth of α,β-unsaturated sulfones with a trifluoroacyl group *via* sulfonium salts and sulfides, 12407
regioselective lipase-mediated acylation-deacylation in thiadiazine diacyclonucleosides, 13865
of sodium salts of acylhydrazones of 1,3-dioxo-compds, synth of (*E*)-β-keto-enehydrazides, 11447
synth of indolylquinolines using indole or its 5-substituted derivs as substrates under Friedel-Crafts acylation conditions, 10803

Acyloins
5-(prop-2-enyl)-2ξ-hydroxy-5α-cholestan-3-one, ene reaction of, 13461

Adamantanes
2,4-disubstituted 1-aza-adamantanes, synth *via* *N*-protected 3-azabicyclo[3.3.1]non-6-ene, 8853

Addition reactions
β-acylvinyl intermolecular radical additions to double bonds, synth of functionalised (*E*)-αβ-unsaturated carboxylic acids, 6715
addition of allyl- and crotylboronates to aldehydes, development and application of a force field model of the transition state, 8815
of alkyllithium reagents to aldehydes induced by chiral lithium alkoxides, 6109
of ammonia and alkylamines to methoxy-substituted styrene derivs, 9275
arylthiol addition to 5-alkoxy-2(5*H*)-

furanones, kinetic resolution of furanones, 4775
asymmetric 1,2-addition of organolithiums to aldimines catalysed by chiral amino ether, 4429
asymmetric addition of cyanohydrins to aldehydes, conformational comparison of cyclo-[(*S*)-His-(*S*)-Leu] and cyclo-[(*S*)-His-(*S*)-Phe] as catalysts, 7933
asymmetric addition of pantolactone to methyl (3-benzoylphenyl) ketene in asymmetric synth of 2-(3-benzoylphenyl) propionic acid (ketoprofen), 6875
of chiral organolithium compds to aldehydes, configurational stability, 6049
conjugate addition of allylsilanes to $\alpha\beta$-unsaturated *N*-acyloxazolidinone, 1073
copper-catalysed conjugate - of organozirconocenes to $\alpha\beta$-unsaturated carbonyl groups, synthetic and mechanistic studies, 1935
cyanide addition to β-hydroxyketones, synth of *syn* β-hydroxycyanohydrins and *anti* 2,4-dihdyroxyamides, 8169
of 4,6-dimethoxy-2,3-diphenylindole with aldehydes at C-7, 10497
enantio- and diastereoselective titanium-TADDOLate catalysed addition of diethyl and bis(3-buten-1-yl)zinc to aldehydes, 4363
enantioselective conjugate − of diethylzinc to chalcones catalysed by chiral Ni(II) aminoalcohol complexes, 4479
enantioselective conjugate addition of *n*-butyl to enones using scalemic tetraamines (DIMAPP ligands) as chiral cuprate ligands, 4455
enantioselective copper-catalysed 1,4-additions of Grignard reagents to enones using mercaptoaryl-oxazolines as ligands, 4467
of *gem*-dichloroallyl lithium to benzophenones in the presence of macrocyclic ligands, synth of chloro oxiranes, 8169
imidazole and benzimidazole addition to quinones, formation of *meso*- and d,l isomers of 2,3-bis(benzimidazol-1'-yl)-1,4-dihydroxybenzene, 12489
Michael-Dieckmann addition of lithium dienediolates of carboxylic acids to the lithium salts of carboxylic acids, synth of cyclohexenones and polycyclic ketones, 2571
Mn(III)-promoted addition of amidoalkyl radicals to olefins, ultrasound effects, 13847
of *N*-benzylhydrazine to sugar δ-enlactones, stereo- and regiochemistry, 7219
nucleophilic 1,2- − of bromine to electron deficient double bonds by perbromide reagents, 6433
nucleophilic - to tricyclodecadienone epoxides and Payne rearrangement of resulting $\alpha\beta$-epoxycyclopentanols, 3473
1,4- − of organocopper reagents to ethyl 3-[(*S*)-2,2-dimethyl-1,3-dioxolan-4-yl]propenoate, 13173
(3+2) photoaddition of 4-amino-1,2-naphthoquinones with alkenes, synth of 1*H*-benz[*g*]indole-4,5-diones, 8293
photoinduced addition reactions of chloranil with alkenes − factors influencing the reaction site, 1199
of primary alkyl Grignard reagents to carbocyclic and heterocyclic arylketones in the presence of magnesium TADDOLate, 6117
proton addition to silylstyrenes, overcoming the predilection for protiodesilylation, 11379
sulfane addition to 2,3-dimethyl-1,3-butadiene, synth of bis(2,3-dimethylbutenyl)-sulfanes, 11187
of sulfur(II)- and iodine(III)-containing electrophiles with *endo*-tricyclo-[6.2.1.$0^{2,7}$]undeca-4,9-diene-3,6-dione, 9933
Ti-TADDOLate catalysed enantioselective addition of alkyl- and aryl-titanium derivs to aldehydes, 7473
of trimethylsilyl cyanide to aldehydes using a chiral Schiff base-titanium alkoxide complex as catalyst, 4385

Aggregation

aggregation behaviour of butyllithium, phenyllithium and lithium diisopropylamide in dimethoxy- and diethoxymethane, 5861
influence of − and directing groups on aromatic lithiation, 5903
intramolecular − of 1,11-dilithio-5,5,7,7-tetramethyl-5,7-dihydrodibenz[*c,e*]oxepin, a conformationally confined analogue of

o,o'-dilithiobiphenyl, 5881
Alcohols
2-acetamido-1,2,4-trideoxy-1,4-imino-D-galactitol and -D-glucitol, synth from *N*-acetyl-D-glucosamine as glycosidase inhibitors, 13299
(*S*)-alcohol by asymmetric hydrogen-transfer reduction of ketones with isopropanol catalysed by ruthenium complexes with chiral Schiff base ligands, 4347
alcohol oxidations by anionic peroxomolybdenum complexes, 5119
sec-alcohols derived from macrocyclic lactones of resocylic acid, correlation of conformation and their stereoselective transacetylation in organic solvents by *Pseudomonas fluorescens* lipase, 13753
alcoholysis of furyl-2-oxirane, mechanistic study, 5555
aliphatic alcohols, radical-based deoxygenation *via* thioxocarbamate derivs using phenyl isothiocyanate, 10193
alkanol and alkenol from sodium borohydride reduction of coumarin, 12979
O-alkylselenocarbamates of various alcohols, synth and reactivity, 639
allyl alcohols from [2,3]-Wittig rearrangement of lithiated diallyl ethers, influence of geometry of the carbanionic moiety on diastereoselectivity, 3687
allylaminoalcohols by reaction of secondary halogen magnesioamides with 2-methyl-1,3-dioxep-4-ene, 12953
allylic - by reaction of the α-sulfinyl carbanion of *p*-tolyl 2-(trialkylsilyl)ethyl sulfoxides or t-butyl 2-(trimethylsilyl)-ethyl sulfoxide with aldehydes and subsequent desilylsulfinylation, 1045
allylic substitution between allylic alcohols and anionic C-nucleophiles with allylic alkoxides as substrates, 529
allylic and tertiary benzylic alcohols, catalytic conversion into corresponding ethers in the presence of cerium(IV), 1859
β-amino-alcohol derivs by regioselective transformation of benzo[*a*]pyrene 4,5-oxide and 3-methylcholanthrene 11,12-oxide, 8505
(1*R,cis*)-3-aminomethyl-1,2,2-trimethylcyclopentane-methanol from α-camphidone, synth as an intermediate in the synth of carbocyclic nucleoside analogues, 2175
9-azabicyclo[4.2.1]nonan-1-ols (norhomotropan-1-ols), *N*-alkyl and 7,8-dehydro-derivs and oxabicyclic analogues, synth and tautomerism of, 11039
β-arylthio alcohols, Ritter-type substitution reaction, retention of configuration through anchimeric assistance of the arylthio group, 8997
benzenebutanols, cyclodehydration to prepare tetrahydronaphthalenes, 3297
benzyl alcohol derivs, reaction with 2-alkoxy-2-fluoro-glycosyl fluorides, synth of isochromane or *O*-glycoside derivs, 9125
by enantio- and diastereoselective titanium-TADDOLate catalysed addition of diethyl and bis(3-buten-1-yl)zinc to aldehydes, 4363
by reductive cleavage of highly functionalised 2-amino-4-aryl-4*H*-pyrans, 3509
chiral β-aminoalcohols as catalysts for asymmetric base-catalysed cycloaddition between anthrone and some dienophiles, 4543
chiral Ni(II) aminoalcohol complexes as catalysts in enantioselective conjugate addition of diethylzinc to chalcones, 4479
1,4-dideoxy-1,4-imino-hexitols, synth from aldonolactones and evaluation as glycosidase inhibitors, 7513
1,8-dihydroxytetralins, synth by tandem reduction/intramolecular hydroxyalkylation of 4-(3-hydroxyphenyl)alkanoates, 11945
(*S*)-1,2-bis(diphenylphosphino)butane-4-ol, acyclic analogue of hydroxy norphos, synth from L-ascorbic acid and catalytic properties, 10419
αβ-epoxycyclopentanols contained in a rigid tricyclic system, Payne rearrangement of, 3473
flavanols, oxidation by potassium superoxide, synth of acids and aldehydes, mechanism, 9303
flavonols by condensation of active methylene compds with arylaldehydes in water, 11499
from addition reactions of primary alkyl Grignard reagents to carbocyclic and heterocyclic arylketones in the presence of magnesium TADDOLate, 6117

from oxidative debenzylation of substituted benzyl ethers using dimethyldioxirane, 9983
from silica gel supported zinc borohydride hydration of unactivated alkenes and alkynes, 6579
2-haloethynyl-2-norbornanols, ring expansions of, synth of 2-[(*Z*)-haloiodomethylidene]bicyclo[3.2.1]octan-3-one and 3-[(*Z*-haloiodomethylidene]bicyclo[3.2.1]-octan-2-one, 11793
homoallyl alcohols, oxidative cyclisation under heterogeneous permanganate oxidation conditions, synth of medium-ring keto lactones, 11709
homoallylic – by reaction of allylic sulfides, bearing two different leaving groups, with organocopper reagents by selective substitution of the heterocyclic moiety, 7283
(−)-9-nor-9β-hydroxyhexahydrocannabinol (HHC), synth and activity of conformationally restricted hybrids of CP-55,940 and HHC, 2671
2'-hydroxyphenylpyridinemethanols, synth by metal-template *ortho*-regioselective alkylation of phenols with 2-, 3- and 4-pyridinealdehydes, 10587
indirect transformation of – into organolithium reagents through the corresponding dialkyl sulfates, 3427
ketols from yeast reductions of fluorinated β-diketones, 11995
(*S*)-matsutake alcohol by bovine liver acetone powder (BLAP) catalysed hydrolysis of 8-(tetrahydropyran-2-yloxy)-3-acetoxy-1-octene, 4137
medium-ring nitrogen-containing alcohols and related compds, synth and stereochemistry, 13199
8-methyl-*trans,trans*-cyclodeca-3,7-dien-1β-ol, synth and biotransformation into 4aβ-methyl-1,2,3,4,4a,5,6,7,8,8aα-decahydronaphthalene-1,7β-diol by *Cichorium intybus*, 3169
cis- and *trans*-4-methylcyclohexanols, solvent effects on the lipase-catalysed transesterifications of, 4681
3,3-bis(methylthio)-1-(arylcyclopropyl)-2-propen-1-ols, rearrangement studies, synth of functionalised cyclopentenes and polyene esters, 255
monofluorocyclohexanols through radical cyclisation of *gem*-chlorofluoroheptenols, stereochemistry, 12361
ortho-substituted keto-alcohols by directed *ortho* metalation of tertiary benzamides using lactones as electrophiles, 4897
p-oxygenated benzylic alcohols, effect of *para*-substituent on Mitsunobu reaction of–, synthetic routes to flavan-3-ols, 5469
(*S*)-(−)-pindolol and [3'-13C]-(*R*)-(−)-pindolol, effective β-blockers, synth utilising a lanthanum-lithium-(*R*)-BINOL catalysed nitroaldol reaction, 12313
protected as silyl ethers; utilization of neutral alumina as a mild reagent for the selective cleavage of primary and secondary silyl ethers, 8539
2-(2'-pyridyl)-2-aminoalcohols, synth from 4-(2'-pyridyl)-1,3-oxazolidine precursors, 13493
reaction with carboxylic acid halides; alkyl halide vs. ester formation, 217
2-sulfone substituted 1-furyl-4-penten-1-ols, synthetic and kinetic studies of substituent effects in Diels-Alder reactions of, 6767
tertiary allylic alcohols, vinylation with iodo-acetal, new protocol for the synth of isoprenoid aldehydes, 3389
thiochroman-3- and 4-ols by reaction of thiochroman-3,4-diones with methyl magnesium iodide, 7865
trans-2-alkoxycyclohexan-1-ols, synth by hydrolysis of *trans*-1-acetoxy-2-alkoxycyclohexanes using pig liver acetone powder as a biocatalyst, 10521
(*R*)- and (*S*)-1-(*m*-trifluoromethylphenyl) propan-2-ols, precursors of (*S*)-fenfluramine, synth by asymmetric epoxidation of allylic alcohols, 171
unexpected products from rearrangement of β-amino sulfoxide under Pummerer reaction conditions, 13501

Aldehydes
alkyllithium reagent addition to – induced by chiral lithium alkoxides, 6109
allyl- and crotylboronate addition to –, development and application of a force field model of the transition state, 8815
8-amino-7-quinolinecarbaldehyde, synth from 8-hydroxyquinoline and subsequent Friedländer condensation with ketones

to give 1,10-phenanthrolines, 10685
arylaldehydes for condensation of active methylene compds in water, synth of flavonols, 11499
asymmetric addition of cyanohydrins to –, conformational comparison of cyclo-[(*S*)-His-(*S*)-Leu] and cyclo-[(*S*)-His-(*S*)-Phe] as catalysts, 7933
benzaldehydes; remote asymmetric induction using neighbouring group participation of a sulfenyl group, 8317
benzyloxybenzaldehydes, conversion to porphyrins tailored with eight facially-encumbering groups, solid-state light-harvesting complexes, 11097
by Lewis acid-promoted selective rearrangement of trisubstituted epoxides, 3663
2-chloro-2-fluoroacetaldehyde, conformational analysis and calculated transition state structures of nucleophilic addition reactions, 11197
enantio- and diastereoselective titanium-TADDOLate catalysed addition of diethyl and bis(3-buten-1-yl)zinc to –, 4363
enantioselective addition of trimethylsilyl cyanide to – using a chiral Schiff base-titanium alkoxide complex as catalyst, 4385
cis-α,β-epoxy aldehyde, *erythro*-selective addition of a Grignard reagent to –, subsequent conversion to 3-amino-1,2-diol, dihydroxyethylene dipeptide isostere A-82768, 6163
(*E*)-α,β-ethylenic aldehydes by reaction of 3-nitro-5,6-dihydro-4*H*-pyran with organoalanes, 1871
α-halocarboxylic acid derivs and α-haloaldehydes from α-halo-α-sulfinyl carboxylic acid, esters and aldehydes *via* magnesium enolates, 4957
α-hydroxyaldehyde dimethyl acetals by conversion of α-haloaldehyde dimethyl acetals into α-haloaldehyde hemiacetal acetates and subsequent methanolysis, 7898
β-hydroxysulfoximine-catalysed enantioselective alkylation of –, 4355
indole-2-carboxaldehyde, condensation of –, synth of ethyl β-carboline-3-carboxylate (β-CCE) and methyl 4-methyl-β-carboline-3-carboxylate (4-methyl-β-CCM), 6299
isoprenoid - by vinylation of tertiary allylic alcohols with iodo-acetal and subsequent acetal-hydrolysis-dehydration reaction, 3389
p-methoxy or *p*-allyloxybenzaldehyde, hydrocyanation of – in synth of hydroxyamides, tembamide and aegeline, cardiac drug denopamine and analogues of bronchodilator salbutamol, 13739
phenylglyoxal or glyoxal, reaction with *N*-substituted enamines, synth of *N*-substituted pyrrolinones, 7849
pinacol coupling of aliphatic - promoted by niobium(III) reagent, synth of diols, 2841
polyhydroxy aldehydes, indium-mediated allylation of, synth of 2-deoxy and 2,6-dideoxy carbohydrates, 749
reaction with excess pyrrole, synth of *meso*-substituted dipyrromethanes and subsequent reaction with aldehyde to yield *trans*-substituted *meso*-porphyrins, 11427
2-sulfenylated aldehydes, enantioselective synth by alkylation of sulfenylated acetaldehyde SAMP-hydrazones, 3349
Ti-TADDOLate catalysed enantioselective addition of alkyl- and aryl-titanium derivs to –, 7473
α-trialkylsiloxy aldehydes and their derivs by reduction of α-trialkylsiloxy nitriles with diisobutylaluminium hydride (DIBAH), 2821
α-unbranched aliphatic aldehydes, *gem*-dialkylation, alkylative reduction and olefination of – by reaction of *gem*-bistriflates with higher order dialkylcyanocuprates, 13231
αβ-unsaturated aldehydes by thermal dehydration and dethioacetalization of β-hydroxydithioacetals with dimethyl sulfoxide, 5783
α,ε-unsaturated aldehydes, stereochemical control in the intramolecular ene-reactions of – using bulky organoaluminium reagents, elucidation of the transition state, 6505
see also Enals

Aldol reactions
aldolisation reactions of silyl ketene acetals with lactone carbonyls mediated by fluoride, 3333

and asymmetric alkylation of amide enolates using C^2-symmetric aziridines as chiral auxiliaries, 9797
of benzaldehydes; remote asymmetric induction using neighbouring group participation of a sulfenyl group, 8317
of chiral *Z* and *E* enol borinates bearing mixed ligands, 1227
of enolates derived from 1,3-diacylimidazolidine-2-thiones and 1,3-diacylimidazolidin-2-ones, 6621
use of boron enolates of homochiral C_2-symmetric 1,3-diacylimidazolidin-2-ones prepared from tartaric acid in – and alkylation reactions, 7521

Alkaloids
andersobine, diterpenoid alkaloid from *Delphinium andersonii*, structure, 12283
(–)-antirhine, indole alkaloid, enantioselective synth by chemo-enzymatic approach from (1*R*-2*S*)cyclohexene dimethanol monoacetate, 8837
aplysinopsin alkaloids of marine origin, synth by iminophosphorane mediated imidazole ring formation, 2241
Aspidospermatan skeleton, approaches to – by reduction of dihydropyridines and subsequent acid cyclisation, 5233
9-azabicyclo[4.2.1]nonan-1-ols (norhomotropan-1-ols), *N*-alkyl and 7,8-dehydroderivs and oxabicyclic analogues, synth and tautomerism of, 11039
bastadins, alkaloids from marine sponges *Ianthella basta* and *Ianthella flabelliformis*, evaluation as inosine 5'-phosphate dehydrogenase (IMPDH), 7367
bridged anabasine 5,8,9,10,11,11a-hexahydro-6*H*-pyrido[2,1-*f*][1,6]naphthyridine, synth and conformational analysis, 9909
castanospermine, synthetic functionalisation at C-6, synth of australine and analogues, 2131
chilocorine, heptacyclic alkaloid from a coccinellid beetle, *Chilocorus cacti*, structure, 2365
(±)-clavizepine, benzopyranobenzazepine alkaloid from *Corydalis claviculata*, total synth, 10215
convolutamides A-F, γ-lactam alkaloids from the marine bryozoan *Amathia convoluta*, structures, 10201
(±)-cuanzine and (±)-decarbomethoxyapocuanzine, indole alkaloids, synth from 7-methoxytryptamine, 8209
(–)-desoxoprosopinine and (–)-desoxoprosophylline, total synth involving intramolecular *N*-alkylation of a D-glucose-derived substrate, 5681
discorhabdin C, batzelline C and isobatzelline C, pyrroloquinoline alkaloids, synth and cytotoxic study of intermediates, 2017
α,α'-disubstituted piperidines and pyrrolidines, *cis*- and *trans*-configurations by GC-FTIR, 11329
(–)-eburnamonine, tetracyclic indole alkaloid antihypertensive drug, formal synth by [3,3]-sigmatropic rearrangement of β-alkoxy acrylate derived from *rac*-3-ethyl-cyclohexenol, 9487
ellipticine (5,11-dimethyl-6*H*-pyrido[4,3-*b*]carbazole, chlorination of – *via* its *N*-oxide, synth and selective acetylation of 5,6,11-trimethyl-5*H*-benzo[*b*]carbazole, 4811
ellipticine derivs by modification of the cyano group of 1-cyano-6-methylellipticine, 2551
geissoschizine isomers, synth using Claisen rearrangement, 3537, 3537
Gelsemium alkaloid, 11-methoxy-19(*R*)-hydroxygelselegine, from sarpagine-type indole alkaloid gardnerine, 11813
ingamines A and B, cytotoxic alkaloids from the marine sponge *Xestospongia ingens*, structures, 6137
ircinols A and B, antipodes of manzamine-related alkaloids from Okinawan sponge *Amphimedon* sp., structures, 7957
Z- and *E*-isositsirikine epimers, prep and conformational study of –, determination of their C16 configurations, 9207
kinamycin antibiotics; synth of hydroxy-substituted benzo[*b*]carbazoloquinone cyanamides as intermediates towards –, 10893
korupensamine A, naphthylisoquinoline alkaloid from *Ancistrocladus korupensis*, biomimetic oxidative dimerisation of –, synth of michellamines A-C, C_2-symmetric antiviral, 9643
(+)-(*R*)- and (–)-(*S*)-lunacridine, quinoline alkaloids, synth by resolution of prenyl bromohydrin esters and derivs,

11219
lysergic acid derivs, synth by tandem radical cyclisations, 2183
makaluvamines A-E, cytotoxic pyrroloiminoquinone alkaloids from marine sponge *Zyzza* cf. *marsailis* and *Histodermella* sp., inhibitory activity against topoisomerase II, 13593
11-methoxygelsemamide having a 1,2-secoindole system, synth from sarpagine type indole alkaloid gardnerine, 8363
michellamines, dimeric naphthylisoquinoline alkaloids, assignment of axial chirality by calculated and experimental CD spectra, 7807
monodontamides A-F from the marine gastropod mollusc *Monodonta labio* (Linné), structures, 6805
β-naltrexol, β-naloxol, β-naltrexamine and related morphine series compds, stereoselective synth by application of the Mitsunobu reaction, 9757
nitramarine alkaloid by transmetalation of 1,9-dimetalated β-carboline followed by cross-coupling reaction with 2-chloroquinoline, 12329
(±)-oxerine, monoterpene alkaloid from *Oxera morieri*, total synth from 3-bromopyridine, 13575
(±)-3-oxovincadifformine ethyl ester, aspidosperma alkaloid, synth *via* cyclisation of 3-oxosecodine, 6941
phloeodictines A1-7 and C1-2, antibiotic and cytotoxic guanidine alkaloids from the New Caledonian sponge *Phloeodictyon* sp., structures, 3415, 3415
precoccinelline, ladybug defence alkaloid, stereoselective synth from (2*S*,6*R*)-2-cyano-6-oxazolo-piperidine, 3123
pyrido- and pyrrolo[2,3,4-*kl*]acridines, marine related alkaloids, from β,β'-diaminoketones and a variety of cyclohexanediones and quinones, 12959
pyrrolizidine oximes 222 and 236, alkaloids of poison-frog *Dendrobates pumilio*, synth and structure, 6129
routes towards –, Pictet-Spengler cyclisation of iminium intermediates derived from reaction between *N*-β-(3-indolyl)-ethyl amino acid esters and substituted aromatic aldehydes, synth of tetrahydro-β-carbolines, 11865
safracins, synth of ABC ring of safracins in approach to the total synth of saframycins, 3915
(±)-septicine, indolizidine alkaloid, synth from dimethyl squarate involving ring expansion of 2,3-bis-(3,4-dimethoxyphenyl)-4-(1-pyrrolo)cyclobutenone, 6173
Solanum steroid alkaloid solanidine, conversion into nitrogenous brassinosteroids, steroidal phytohormones, 10923
solenopsins, venom alkaloids of *Solenopsis geminata* and *invicta* ants, absolute configuration, 8465
strychnine, prep of a hexacyclic enamine intermediate for conversion into, 2681
Strychnos alkaloids, synth of the tetracyclic ABED ring system from 2-(1,3-dithian-2-yl)indole, 6585
7-substituted dehydronoraporphines, isoquinoline alkaloids, synth by intermolecular benzyne cycloaddition approach, 11257
swainsonine-analogues hydroxyindolizidines by cyclocondensation of sugar azomethines with Danishefsky's diene, 13671
1,2,3,4-tetrahydro-8-hydroxymanzamines, sponge alkaloids from Papua New Guinea sponges *Petrosia* and *Cribochalina*, isolation and characterisation, 13567
5-(*p*-toluenesulfonyl)-5,6,13,14-tetrahydro-12(11*H*)-benzo[*c*]phenanthridinones, synth from 3-phenyl-4(3*H*)-isoquinolinone, 10971
(±)-tylophorine, phenanthroindolizidine alkaloid from *Tylophora asthmatica*, synth by intramolecular cycloaddition of an azide with an ω-chloroalkene, 12293
variolin A and B and *N*(3')-methyl tetrahydrovariolin B from Antarctic sponge *Kirkpatrickia varialosa*, structures, 3987, 3993
zoanthamine alkaloids from a marine zoanthid of genus *Zoanthus*, synthetic approach to C11-C20 fragment from (–)-perillyl alcohol, 9135

Alkanes

1,ω-bis(dichlorophosphino)alkanes, reaction with bromotolyl, bromoxylyl and bromodiphenylmethane, synth of optically active expanded chelate phosphines, 4303

functionalization of saturated -, use of t-butyl hydroperoxide as oxidant in Gif-type systems, 19, 31

Alkenes

$C_{24}H_{28}$ cage-functionalised alkenes, synth, characterisation and crystal density modelling, 1687

chloroalkenes and chlorocumulenes, dipole moments of, identification of stereoisomers based on dielectric studies, 1707

cyclopropyl-containing alkenes, perfluoroacylation of, 775

1,1- and 1,2-diarylethylenes, electron transfer photooxygenation of – sensitised by 2,4,6-triphenylpyrylium tetrafluoroborate, involvement of oxirane intermediates, 8773

1,3-dichloropropene as a source of the 1,3-dianion derived from propene; synth of unsaturated 1,5-diols and dihydropyrans, 13269

1-halo-1-alkenes, hydroboration of – with catecholborane, synth of 1-halo-1-alkyl boronic esters as precursors for novel thrombin inhibitors, 3803

isotactic nonamethoxy-1-pentacosene, from blue-green alga *Scytonema ocellatum*, synth and absolute configuration, 11133

4- to 9-membered 1-methoxycycloalkenes, NMR, force field and MNDO studies on, 5795

methoxy-substituted *trans*-1-phenylpropenes and 7-methoxy-1,2-dihydronaphthalenes, photoinduced nucleophilic addition of ammonia and alkylamines to –, 9275

perfluoroacylation of – with trifluoroacetic anhydride, synth of trifluoromethylalkenylketones, 11023

phosphatriafulvenes, phosphaalkenes with inverse electron density, reactions with nucleophilic reagents, 759

(3+2) photoaddition with 4-amino-1,2-naphthoquinones, synth of 1*H*-benz[*g*]-indole-4,5-diones, 8293

photoinduced addition reactions of chloranil with -, factors influencing the reaction site, 1199

sulfenocyclisation of – and alkynes using 4'-nitrobenzenesulfenanilide, 12395

2-tributylstannyl-1-alkenes from 2-tributylstannyl-2-propen-1-yl acetate, 4853

unactivated – and alkynes, hydration by reaction on silica gel support with zinc borohydride in 1,2-dimethoxyethane, 6579

vicinal dilithioalkenes, stereoselective synth by addition of lithium metal to cyclic and acyclic alkynes, 8019

see also Enamines, Enamides, Enols, Olefins

Alkylation

of 1-alkyl-4-cyano-3-methoxy-5,6-dihydroisoquinolines induced by potassamide, 13277

alkylation *versus* bromination in synth of 2-bromoesters from carbanions using 1,2-dibromoethane, 9825

of allylic carbonates by aromatic thiols, synth of allylic aryl sulfides, 10321

amidoalkylation of (2-chloroethyl)benzene or (2-bromoethyl)benzene with α-hydroxyhippuric acid and *N*-methoxycarbonyl α-hydroxyglycine, synth of D,L *p*-vinylphenylglycine, 7009

amidoalkylation of Phe-α-methoxyglycine, synth of derivs of 4-amino-2-benzazepin-3-one-1-carboxylic acid, conformationally restricted bridged peptide analogues of Phe-Gly, 10771

asymmetric – and aldol reactions of amide enolates using C_2-symmetric aziridines as chiral auxiliaries, 9797

asymmetric - of cyclic and acyclic β-keto ester acetals with C_2-symmetric cycloalkane-1,2-dioxy moiety, synth of enol ethers with a chiral quaternary carbon, 3315, 3315

asymmetric electrophilic α-amidoalkylation; camphorimide derived auxiliary for the asymmetric synthesis with *N*-acyliminium ions, synth of 2-substituted piperidines, 3113

carbonyl-ene cyclisation/cycloalkylation of trifluoromethyl ketones, route to trifluoromethyl diterpenoids, 11921

catalytic allylic – with palladium complexes of 1-(2-diphenylphosphino-1-naphthyl)isoquinoline, 4493

de– of ammonium salts by thiolate anions, a model of the cobalamin-independent methionine synthase reaction, 7837

of 5,10,15-tris(3,5-di-t-butyl-4-hydroxyphenyl)-20-(4-pyridyl)porphyrin, 13477
enantioselective – by phase-transfer catalysis, 4507
geminal dialkylation, alkylative reduction and olefination of aliphatic aldehydes; reaction of *gem*-bistriflates with higher order dialkylcyanocuprates, 13231
Grignard- and organolithium-type addition to α- and β-alkoxy cyclic ketones in the presence of methylaluminium bis(4-substituted-2,6-di-t-butylphenoxide), 8983
hydroxy– of 4-(3-hydroxyphenyl)alkanoates, synth of 1,8-dihydroxytetralins, 11945
β-hydroxysulfoximine-catalysed alkyl transfer from diethylzinc to benzaldehyde, 4355
of menthyl hippurate and some related materials, 1967, 1975
metal-template *ortho*-regioselective – of phenols with 2-, 3- and 4-pyridinealdehydes, synth of 2'-hydroxyphenylpyridinemethanols, 10587
of 9-cyanoanthracene dianion and 9-cyano-9,10-dihydro-9-anthryl anion, synth of 9-cyano-9,10-dialkyl-9,10-dihydroanthracene and 9-cyano-9-alkyl-9,10-dihydroanthracene respectively, 10011
photoinduced – of 1,2,4,5-tetracyanobenzene in the presence of tetraalkylsilane or –stannane, scope and mechanism, 6401
of pyrimidyl dianions, synth of 3',5'-*O*-bis-tetrahydropyranyl, trimethylsilyl and t-butyldimethylsilyl derivs of 5-bromo-2'-deoxyuridine, 1699
regioselective – using tosylated lithium 2-(lithiomethyl)-2-propen-1-olate, a γ-alkoxide allyl sulfone anion, 6603
selective nitration *versus* oxidative dealkylation of hydroquinone ethers with nitrogen dioxide, 6727
of 2-substituted-4-methylbenzimidazoles, regioselectivity of, 5535
of sulfenylated acetaldehyde SAMP-hydrazones, synth of 2-sulfenylated aldehydes, 3349
use of boron enolates of homochiral C_2-symmetric 1,3-diacylimidazolidin-2-ones prepared from tartaric acid in – and aldol reactions, 7521

Alkynes
alkyne dicobalthexacarbonyl complexes from cobalt bromide, synth and use in Pauson-Khand cyclopentenone synth, 6955
1-alkynes, palladium-catalysed reaction with (*E*) and (*Z*)-dichloroethenes, synth of (*E*) and (*Z*)-enediynes, 5335
1-alkynes, zirconium-catalysed methylalumination of–, synth of (*E*)-2-methyl-1-alkenyltrimethylstannanes, 5189
alkynyl sugars, epimerisation of – through cobalt complexes, synth of pyran subunits of marine *trans*-fused polyether toxins, 5633
alkynyl sugars, ring opening by Nicholas reaction; application to enantioselective synth of oxepane subunits of marine trans-fused polyether toxins, 12883
2-alkynyl-anilines, -phenols, and -benzamides, palladium-catalysed cyclisation of, synth of methyl 2-substituted indole and benzo[*b*]-furan-3-carboxylates and 3-alkylidenisoindole derivs, 11803
2-alkynyltrifluoroacetanilides, cyclisation with aryl halides and vinyl triflates, synth of 2-substituted-3-acylindoles, 437
γ- and β-aminoalkynes, reaction with hydrogen and carbon monoxide, synth of α-methylene-2-piperidinones and 2-pyrrolidinones, 2533
enetetrayne containing compds, synth and chemistry; Bergman cycloaromatization, 1503
3-(ethynyl)-2-(ethoxy-carbonyloxy)indole-1-carboxylates by reaction of 3-[(1-chloro-2-substituted)ethylidene]indol-2(3*H*)-one with ethyl chloroformate and triethylamine, 12697
ethynylation of azaaromatics using bis-(tributylstannyl)acetylene in the presence of alkyl chloroformate, 13089
2-haloethynyl-2-norbornanols, ring expansions of, synth of 2-[(*Z*)-haloiodomethylidene]bicyclo[3.2.1]octan-3-one and 3-[(*Z*-haloiodomethylidene]bicyclo[3.2.1]-octan-2-one, 11793
[16,16,16-$^2H_3$] 11-hexadecynoic acid and [15,15,16,16,16-$^2H_5$] (*Z*,*Z*)-11,13-hexadecadienoic acid, synth and use as tracers in biosynth of sex pheromone of processionary moth, 9789

perfluoroacylation of – using trifluoroacetic anhydride activated by $BF_3.SMe_2$ complex, synth of α,β-unsaturated sulfones with a trifluoroacyl group *via* sulfonium salts and sulfides, 12407
petroformynes, high molecular polyacetylenes from the marine sponge *Petrosia ficiformis*, absolute stereochemistry, 13261
reaction with lithium metal, synth of vicinal dilithioalkenes, 8019
sulfenocyclisation of – and alkenes using 4'-nitrobenzenesulfenanilide, 12395
unactivated – and alkenes, hydration by reaction on silica gel support with zinc borohydride in 1,2-dimethoxyethane, 6579
see also Diynes, Enynes

Allenes
allenic esters, radical-chain addition of benzenethiol to –, EPR and product studies, 4001
reaction with diazomethane, synth of pyrazines, regioselectivity of, 5561

Allylation
of aldehydes mediated by indium metal, route to 2-deoxy and 2,6-dideoxy carbohydrates, 749
cobalt(II) chloride catalysed regioselective – of 1,3-dicarbonyl compds, 9145
of dichlorocyclobutanones and sequential ring expansions, synth of *cis*-fused cycloheptanones, 12579
of 3-hydroxyisoxazole, 5-isoxazolone and 5-pyrazolone systems, kinetic vs. thermodynamic control and steric hindrance, 515
of lithium 2-fluoro-1,3-dienamides, synth of fluoroterpenoids, 7827
of a range of acetals activated by trimethylsilyl trifluoromethanesulfonate using organoborates, 871
regioselective palladium-catalysed - of fulvenes, 61
with substituted vinylthionium ions, 9365, 9377
of αβ-unsaturated *N*-acyloxazolidinone using allyltrimethylsilane, 1073

Aluminium and compds
methylaluminium bis(4-substituted-2,6-di-t-butylphenoxide) as an efficient non-chelating Lewis acid; application to asymmetric Diels-Alder reaction and diastereoselective alkylation to alkoxy carbonyl substrates, 8983
bulky organoaluminium reagents in ene reaction of α,ε-unsaturated aldehydes, stereocontrol in–, elucidation of the transition state, 6505

Amides
2-alkyl-2-oxazoline-4-carboxyamides derived from α-amino-β-hydroxy acids, reaction with aryl- and alkylsulfonyl chlorides, synth of 2-alkyl-2-oxazoline-4-carboxyamido-*N*-sulfonyl derivs, 5083
amide enolates, asymmetric alkylation and aldol reactions of – using C_2-symmetric aziridines as chiral auxiliaries, 9797
amide-based protecting/radical translocating (PRT) groups, generation of radicals adjacent to carbonyls by 1,5-hydrogen transfer reactions of *o*-iodoanilides, 7343
β-amido-alkylzinc iodides and related configurationally stable zinc organometallics, synth by direct insertion of zinc dust into the corresponding alkyl iodides, 2415
[1,4'-bipiperidine]-4'-carboxamide, a common pharmacophoric group, synth *via* chloroenamines, 3123
α-carbomethoxy-α-diazoacetanilides, cyclisation of, synth of 3-unsubstituted-2-indolinones, 609
chiral – by Ritter-type substitution reaction of chiral β-arylthio alcohols, 8997
1,2-diarylethylamines and ethylenenamides, synth and Bischler-Napieralski reaction of- to yield 3-arylisoquinolium salts and subsequent transformation into 12-methyl substituted benzo[*c*]phenanthridines, 2207
anti 2,4-dihdyroxyamides and *syn* β-hydroxycyanohydrins by cyanide addition to β-hydroxyketones, 8169
β-ketoamides from lipase-catalysed aminolysis and ammonolysis of β-ketoesters, 6935
monodontamides A-F from the marine gastropod mollusc *Monodonta labio* (Linné), structures, 6805
pipercide and piperolein A, insecticidal

unsaturated amides from black pepper *Piper nigrum*, synth, 11113
sinharines, penimides and illukumbins, sulfur containing amides from *Glycosmis cyanocarpa*, synth and corrected structures, 6279
sulfenamides from reaction between amides and *N*-(benzenesulfenyl)-phthalimide or benzenesulfenyl chloride, precursors to aminyl radicals, 1275, 1295
tertiary benzamides, directed *ortho* metalations of – using lactones as electrophiles, synth of keto alcohols, 4897
titanium enolates and "ate" complexes of *N,N*-disubstituted amides and thioamides in the Michael reaction, 7193
βγ-unsaturated amides by one-carbon homologation of allylamines, 453
see also Enamides, Lactams, Peptides and polypeptides

Amidines
1,8-diazabicyclo[5.4.0]undec-7-ene (DBU) and 1,5-diazabicyclo[4.3.0]non-5-ene (DBN), nucleophilic behaviour in reactions with 4-halo-3,5-dimethyl-1-nitro-1*H*-pyrazoles, 865
N-(5-phenyl-1,2,4-oxadiazol-3-yl)-*N'*-arylformamidines, rearrangement into 1-aryl-3-benzoylamino-1,2,4-triazoles, 7315

Amination
by ethyl *N*-[(4-nitrophenyl)sulfonyl]oxycarbamate in the presence of inorganic oxides or carbonates, 3829
catalytic asymmetric reductive – of ketones *via* highly enantioselective hydrogenation of the C=N double bond, 4399
Cs_2CO_3 or CaO as promoters of ethyl *N*-[[(4-methylphenyl)sulfonyl]oxy]carbamate in amination reactions, 11235
electrophilic – by di-t-butyl azodicarboxylate in asymmetric synth of β-aminotetralins, 10909
electrophilic – of chiral 3-hydroxyesters, synth of β-lactams, 11967, 11983
photoinduced nucleophilic addition of ammonia and alkylamines to methoxy-substituted styrene derivs, 9275
reductive – of aldohexoses with mono- and bifunctional alkyl amines, conversion of carbohydrates into EDTA type complexing agents, 8103
reductive – of 2,5-hexanedione and 2,6-heptanedione with hydride reagents, diastereoselective synth of 2,5-dimethylpyrrolidines and 2,6-dimethylpiperidines, 4709

Amines
1-[*N*-alkyl-*N*-(trimethylsilyl)methyl]amines tethered to proximate olefin, PET-induced cyclisations of, synth of pyrrolidines and piperidines, mechanistic and synthetic perspectives, 8185
allylamines, palladium-catalysed carbonylation of -, synth of βγ-unsaturated amides, 453
allylaminoalcohols by reaction of secondary halogen magnesioamides with 2-methyl-1,3-dioxep-4-ene, 12953
aminium salt catalysed rearrangement of α-pinene and β-ionone oxides, 9097
α-amino organolithiums, aracemic 2-lithio-*N*-methylpiperidine and 2-lithio-*N*-methylpyrrolidine as configurationally stable –, synth, 6077
4-amino substituted and 4-unsubstituted 1,10-phenanthroline-3-carboxylic acid derivs, synth as potential DNA cleaving reagents, 889
2-amino-1,4-naphthoquinone, reaction with β-dielectrophiles, synth of 2- and 4-oxo-1*H*-1-azaanthracene-9,10-diones, 12941
8-amino-7-quinolinecarbaldehyde, synth from 8-hydroxyquinoline and subsequent Friedländer condensation with ketones to give 1,10-phenanthrolines, 10685
β-amino-alcohol derivs by regioselective transformation of benzo[*a*]pyrene 4,5-oxide and 3-methylcholanthrene 11,12-oxide, 8505
β-aminoketones by reduction of enaminones, 2255
ω-aminonitriles and aminoazoles, reaction with 5-chloro-1,2,4-thiadiazol-3(2*H*)-ones, synth of fused 1,2,4-thiadiazoles, 7019
2-aminopyridines, synth by reaction of 6-aminopyrimidin-4-(3*H*)-one derivs with dimethyl acetylenedicarboxylate on the basis of Diels-Alder/RDA reactions, 10345
β-aminotetralins by electrophilic amination by di-t-butyl azodicarboxylate, 10909

6-amino-1,4,6-trideoxy-1,4-imino-D-mannitol dihydrochloride and 4-amino-1,4,6-trideoxy-1,6-imino-D-mannitol dihydrochloride as inhibitors of α-mannosidase, 1033
azinium-*N*-(2'-azinyl)aminides, synth, structure and reactivity, 4995
diaminopropenium (vinamidinium) salts, cyclocondensations of–, synth of diarylpyridines and arylpyrimidines, 8127
3,*N*-dilithioalkylamines by 4,4'-di-t-butylbiphenyl-catalysed reductive opening of azetidines with lithium, 5775
N,N-disubstituted anilines, surfactant control of the *ortho/para* ratio in the bromination of, 3797
EDTA type complexing agents from carbohydrates by reductive amination of aldohexoses with mono- and bifunctional alkyl amines, 8103
erylusamines A-E from marine sponge *Erylus placenta*, isolation as interleukin-6 receptor antagonists, structure, 1105
ethanolamine, reaction with 2,3-butanedione, synth of oxazines and tricyclic products, 9951
(*S*)-fenfluramine, synth using Sharpless epoxidation of allylic alcohols, 171
(1*R*,2)-2-fluorocyclopropylamine, synth by cyclopropanation of *N*-benzyl-*N*-vinylcarbamates with zinc-monofluorocarbenoid, 3889, 3905
heterocyclic amines, Michael addition to a nitro-alkene and subsequent reduction/cyclisation of the nitro group, synth of bicyclic pyrazinones, 4887
highly functionalised 2-amino-4-aryl-4*H*-pyrans, synth, 3509, 3509
homochiral epoxybenzocyclooctenamines, benzomorphan analogous CNS agents, preparation from enol ester, 8003
and hydrazines by catalytic asymmetric reductive amination of ketones *via* highly enantioselective hydrogenation of the C=N double bond, 4399
N-(2-hydroxyarylidene)alkylamines, reaction with homophthalic anhydride, synth of 11*H*-4b,10b-dihydro[1]benzopyrano-[4,3-*c*]isoquinoline-6,11(5*H*)-diones, 9399
lithio α-amino carbanions, configurationally stable, synth, 6077, 6089
(*R,R*),(*S,S*) and meso-isomers of a tetraamine and conversion to a fluorinated polyamine analogue using the Mitsunobu reaction, 5579
N-cyanoamines, fate of the cyano group in the reduction of, 8203
oligoamines from di(chloroenamines), 715, 731
oxygen transfer of – using the oxaziridinium salt derived from dihydroisoquinoline as the transfer reagent, synth of nitroso derivs, nitro compds, *N*-oxides and nitrones, 12185
O-protected deaminotunicaminyluracil, synth, 2965
pyrazine and quinoxaline, crystal and molecular structures of – with Rebek's diacid, 8559
reaction with pseudo 2-formylbenzenesulfonyl chlorides, experimental and theoretical studies on the structure of 2-formyl benzenesulfonamides, 5425
scalemic tetraamines (DIMAPP ligands) as chiral cuprate ligands in enantioelective conjugate addition of *n*-butyl to enones, 4455
squalene synthase inhibitor benzylfarnesylamine, farnesyl chain modification to, conversion to the terminal bis(trifluoromethyl)deriv, 3849
6-substituted 4,8-diaza-3,3,9,9-tetramethylundeca-2,10-dione dioximes (propylene amine oximes, PnAOs), synth as ligands for ^{99m}Tc complexes used in struct-ure distribution relationship studies, 8617
α-substituted amines by trapping of α-amino radicals generated by *N*-(2-iodobenzyl) and *N*-(2-iodobenzoyl) 'protected' amines, 13697
tertiary amines, α-cyclisation of–, push-pull enamines form pyrrolines, pyrrolizidines and their ring homologues with dimethyl acetylenedicarboxylate, 7075

Aminium salts
aminium salt induced reactions of aromatic olefins, protic-acid or radical cation catalysed processes, 12685

Amino acids and derivs
1,2-cyano-amines by 1,3-dipolar cycloadditions of ethoxycarbonyl-nitrile benzylimine; synth and reactions of ethyl 2-chloro-2-ethoxyacetate and 2-chloro-2-ethoxyacetyl chloride, 7543

cyclisation of dipeptides derived from Boc anthranilic acid and α-amino acid methyl esters or reaction of *N*-carboxy α-amino acid anhydrides with Boc anthranilic acid, synth of 1,4-benzodiazepin-2,5-diones, 9051
3,3-diphenyl-2-methylalanine, synth by enolate trapping of lithium (1*S*,2*R*,4*R*)-10-dicyclohexylsulfamoylisobornyl-2-cyano-3,3-diphenylpropanoate followed by rearrangement, 9837
2-phenyl-4-oxo-1-amino-cyclohexanecarboxylic acids, synth from Diels-Alder cycloadditions of (*Z*)-2-phenyl-4-benzyliden-5(4*H*)-oxazolone and of methyl (*E*)-2-cyanocinnamate, 12989
α-substituted β-amino acids; synth and stereochemical behaviour of 8-alkyl-3-(1-phenylethyl)-7-oxa-1,3-diazabicyclo-[3.2.1]-octane-4,6-diones, 2955
N-alkoxycarbonyl amino acid *N*-carboxy-anhydrides and *N,N*-dialkoxycarbonyl amino acid fluorides, synth and reactivity, 5309
amino acid esters, phosphorylation with *N*-protected aminoalkylphosphono-chloridates, synth of phosphono peptides containing a phosphonamidate bond, 12743
α-amino acids, elaboration of the side chain of - by palladium catalysed Stille couplings of a γ-tri-*n*-butylstannylallylglycine deriv and an *E*-δ-tri-*n*-butylstannylallylglycine deriv, 3213
β-amino acids, recent approaches to, 9517
α-amino acids, recent developments in synth, 1539
γ-amino butyric acid (GABA); synth of 5-hydroxytiagabine as a human metabolite of the GABA uptake inhibitor tiagabine, 8699
1-amino-2-phenyl(alkyl)cyclopropanecarboxylic acids, asymmetric synth by diastereoselective cyclopropanation of highly functionalised monochiral olefins, 12443
4-amino-5-hexenoic acid, Vigabatrin, an anticonvulsant drug for epilepsy, synth from (*R*)- or (*S*)-methionine, 5569
(±)-2-*endo*-amino-6-*exo*-(methylthio)-[2.2.1]heptane-2-*exo*-carboxylic acid, synth from 5-norbornen-2-ol, 12973
β-amino-alanines and β-(*N*-hydroxy-amino)-alanines, synth from L-serine derived isoxazolidin-5-ones, 5049
1-aminobenzylphosphonic acids from benzylidenediphenylmethylamines, synth for use as structural units in anti-thrombotic tripeptides, 5099
aniline, photochemically induced oxidation of – by hydroperoxides, an electron paramagnetic resonance study, 9511
aniline, reactions with 1-arenesulfonyl-4-nitroimidazoles, 5741
N-(benzyloxycarbonyl)amino acid amides, addition of ethyl glyoxylate, synth of peptide derivs of 5-fluorouracil, 3747
boron analogues of amino acids, chemistry of, 12521
by reaction of arylisocyanates with ethyl (*S*)-(−)-lactate followed by saponification, 10309
cobalamin-independent methionine synthase reaction, dealkylation of ammonium salts by thiolate anions as a model of–, 7837
complexation of amino acids by cyclotetrachromotropylene in aqueous solution, importance of CH-π and π-π interactions, 3453, 3453
cyclic α-amino acids by transition metal-catalysed chlorine transfer cyclisations of carbon-centred glycine radicals, 1907
cyclic γ,δ-unsaturated amino acids by ester-enolate Claisen rearrangement of chelated *N*-protected cycloalkenyl glycinates, 12895
decarboxylative three carbon ring expansion of cyclic secondary α-amino acids *via* azomethine ylid formation, 5067
t-Boc-L-3-deoxymimosine, synth from t-Boc-L-asparagine and conversion into [L-3-deoxymimosine[4]]-angiotensin I, a protein-tyrosine kinase (PTK) inhibitor, 9873
derivs of 4-amino-2-benzazepin-3-one-1-carboxylic acid, conformationally restricted bridged peptide analogues of Phe-Gly, synth by amidoalkylation of Phe-α-methoxyglycine, 10771
design and application of new chiral phosphonates for the enantiomeric excess determination of unprotected amino acids; pH dependency of the diastereomeric shift differences, 11721

α,β-didehydroamino acid derivs as precursors in the synth of 1-aminocyclopropanecarboxylic acids, 9157
β,γ-dihydroxy-β-fluoromethyl amine and α-hydroxy-α-fluoromethyl-β-amino acid, synth from C-4 fluorinated oxiranes, 13485
enantioselective synth of α-amino acids by phase transfer catalysis using Schiff base substrates, 4507
N-halo derivs of glycine and sarcosine, kinetic study of alkoxide-promoted decomposition in aqueous media, 2265
hydroxy substituted - threonine and serine, photochemistry of *N*-phthaloyl derivs, 701
γ-hydroxy-α-amino acids from (*Z*)-2-phenyl-4-benzylidene-5(4*H*)-oxazolone *via* a dihydro-1,3-oxazine intermediate, 10021
α-hydroxy-β-amino ester units by asymmetric reaction of chiral imines with α-silyloxy ketene acetals, stereoselective synth of taxol side chain and norstatine, 2785
(2*S*,3*S*)- and (2*R*,3*R*)-3-hydroxyleucine, asymmetric synth, 9181
3-*epi*-hydroxymugineic acid, distichonic acid A and 2'-hydroxynicotianamine, phytosiderophores, total synth, 265
β-hydroxyphenylalanine and β-hydroxytyrosine derivs by side-chain bromination of *N*-phthaloyl-(*S*)-phenylalanine and tyrosine derivs followed by treatment with silver nitrate, 7327
hypoglycin A, α-amino acid from seeds of *Blighia sapida* tree, asymmetric total synth using Sharpless epoxidation, 12015
N-indole-(2-mesitylenesulfonyl)-β-methyltryptophan, asymmetric synth of optically pure isomers of - for peptide synth, 2391
N-β-(3-indolyl)ethyl amino acid esters, reaction with substituted aromatic aldehydes, synth of tetrahydro-β-carbolines *via* iminium intermediates, 11865
introduction of peptidal side-chains corresponding to phenylalanine, tyrosine and tryptophan onto a steroid template, 4225
γ-iodoallylglycine deriv and an *E*-δ-iodoallylglycine deriv, palladium-catalysed coupling with various organic nucleophiles; elaboration of the side chain of α-amino acids, 2623
malonanilic acid ethyl esters, pyrolysis of, synth of symmetric dianilides of malonic acids, 10331
menthyl hippurate and some related materials, alkylation of, 1967, 1975
α-methyl-α-amino acid from product of Michael reaction of α-cyano carboxylates with vinyl ketones or acrolein, 4439
N-methyl-D-aspartate antagonist SDZ EAB 515, synth of a pyrimidine isostere of, 5735
non-decarboxylative 1,3-dipolar cycloadditions of imines of α-amino acids as a route to proline derivs, 3159
nucleo amino acid incorporation into somatostatin, a tetradecapeptide from ovine hypothalamic extracts, 7485
phytosiderophores, 2'-deoxymugineic acid and nicotianamine, total synth from a β-tyrosine deriv, 9457
erythro N-protected α-amino epoxides and peptidyl epoxides, synth from amino acids, 6333
reactions of α-amino acids and esters with alloxan (Strecker degradation) and 1-phenyl-3-methylpyrazolin-4,5-dione, synth of azomethine ylids, 895
secondary (N-Cl)-α-amino acids, acid-base equilibria and decomposition of, 10509
substituent effects on the mechanism of oxidation of – by peroxomonosulfate, 9495
tetra and hepta peptides containing α,β-dehydrophenylalanine residues in alternate positions, solution conformation of, 907
tetrapeptide analogues based on 1-aminocyclopropane carboxylic acid for inhibition of carboxypeptidase A, 9729
thymidine synth from 3',5'-*O*-bis-tetrahydropyranyl, trimethylsilyl and t-butyldimethylsilyl derivs of 5-bromo-2'-deoxyuridine, 1699
tyrosine, primary precursor involved in the biosynthesis of the pyoverdin chromophores, 9865
D,L *p*-vinylphenylglycine by amidoalkylation of (2-chloroethyl)benzene or (2-bromoethyl)benzene with α-hydroxyhippuric acid and *N*-methoxycarbonyl α-hydroxyglycine, 7009

Ammonium salts
alkyl transfer from quaternary – to cobalt(I), model for the cobalamin-dependent methionine synthase reaction, 8863
ammonium and alkyl ammonium guest cation coordination chemistry of diester-calix[4]arenediquinone, 931
cerium(IV) ammonium nitrate (CAN) for deprotection of 1-(4-methoxyphenyl)-azetidin-2-ones, trapping of the quinone imine intermediate with chloride and iodide ions, 4185
dealkylation of – by thiolate anions, a model of the cobalamin-independent methionine synthase reaction, 7837
from reactions of *N*-(trifluoromethylsulfonyl)arenesulfonimidoyl- and *N,N'*-bis(trifluoromethylsulfonyl)arenesulfonodiimidoyl chlorides with ammonia, 6891
Annulation
regioselective benz- of alkenyl chromium carbene with 2-(trimethylsilyl)-1-phenylethyne, synth of silyl quinones with subsequent iodination and cross-coupling to phenyl quinones, 2003
regiospecific radical – strategy to functionalised chiral bicyclo[3.3.1]-nonanes, 8781
Anthracenes
9,10-anthracenedicarbonitrile and 1,4-naphthalenedicarbonitrile, photochemical reactions in acetonitrile in the presence of bases, reactions *via* radical cations, 2115
9-cyanoanthracene dianion and 9-cyano-9,10-dihydro-9-anthryl anion, alkylation to produce 9-cyano-9,10-dialkyl-9,10-dihydroanthracene and 9-cyano-9-alkyl-9,10-dihydroanthracene respectively, 10011
2- and 4-oxo-1*H*-1-azaanthracene-9,10-diones, synth from 2-amino-1,4-naphthoquinone, 12941
pyropheophytin-anthraquinone linked molecules, synth as models for the study of photoinduced electron transfer, 4723
two pentacyclic analogues of the retinoid temarotene with a tetrahydroanthracene structure, synth using palladium catalysed coupling of a stannylated pyridine with an aromatic triflate, 2459
Anthracyclines, anthracyclinones
4'-deoxy C-3'-homo anthracyclines, synth from (*S*)-propylene oxide, cytotoxic activity, 1165
Antibiotics
ambruticine, antifungal, antibiotic, construction of the right hand portion by intramolecular silyl-modified Sakurai reaction, 7141
analogues of parabactin A and agrobactin A, synth to chelate iron and to promote the growth of iron-starved *Paracoccus denitrificans*, 11781
antiinflammatory Chinese medicine Shu Wu Jia, synth from a triterpenoid saponin derived from *Nothopanax davidii* Harms (*Araliaceae*), 11601
(±)-aphidicolin, antibiotic from fungus *Cephalosporium aphidicola* Petch, formal synth by successive intramolecular Diels-Alder reactions, 10183
6-azabicyclo[3.2.0]hept-2-ene derivs as potential anti-bacterial agents and β-lactamase inhibitors, synth and biological evaluation, 12049
azalide antibiotics; conformational analysis of 9-deoxy-9a-aza-9a- and 9-deoxo-8a-aza-8a-homoerythromycin A 6,9-cyclic iminoethers, 12201
bicyclic β-lactams by intramolecular nucleophile transfer reactions of *N*-tosyloxy β-lactams, 8275
(+)-blastmycinone and (−)-3-*epi*-blastmycinone, synth from tetronic acid derivs, 8337
BRL 49467, anti-bacterial compd based on mupirocin, synth using Peterson reaction, 6643
bromotyrosine metabolites from marine sponge *Psammaplysilla purpurea*, structure, 12009, corrig. 12783
calicheamicin, antitumor antibiotic, features of DNA recognition for oriented binding and cleavage by calicheamicin, 1361
calicheamicin, antitumor antibiotic, probing the basis for the binding specificity of calicheamicin γ^1, molecular dynamics study, 1379
calicheamicin, enediyne containing antitumour antibiotic, circular dichroism studies of calicheamicin-DNA intera-

ction, 1341
calicheamicin, enediyne containing antitumour antibiotic, NMR characterization of - bound to DNA, 1351
calicheamicin γ^1 and esperamicin-A1, synth of bicyclic core structure using [2,3]-Wittig rearrangement, 1469
(±)-cervinomycins A1 and A2, xanthone antibiotics from *Streptomyces cervinus*, total synth, 11729
cheimonophyllon A-E and cheimonophyllal, bisabolane sesquiterpenes from the Basidiomycete *Cheimonophyllum candidissium*, structures, 12649
4'-deoxy C-3'-homo anthracyclines, synth from (*S*)-propylene oxide, 1165
dirithromycin and epi-dirithromycin, conformational analysis, 3857
d,l-duocarmycin, its 2-epimer, (+)-duocarmycin A and its three isomers, antitumour antibiotics from *Streptomyces* sp., synth and cytotoxic activity against P388 murine leukemia, 2793, 2809
dynemicin A; synth of an anthraquinone intermediate for –; unusual formation of spiro-oxindole ring, 11143
dynemicin A, antitumour antibiotic with a 10-membered cyclic enediyne moiety, synth of a cyclic enediyne model compd of, 1449
dynemicin A, cyclic enediyne antibiotic from *Micromonospora chersina*, synthetic studies involving quinoline derivs as intermediates, 5621
enediyne antibiotics, recent progress in - (Symposia-in-print), 1311
(*E*) and (*Z*)-enediynes, antitumour antibiotics, synth by palladium-catalysed reaction of (*E*) and (*Z*)-dichloroethenes with 1-alkynes, 5335
enetetrayne containing compds, synth and chemistry; Bergman cycloaromatization, 1503
esperamicin, calicheamicin, diynemicin and neocarzinostatin, enediyne antitumour agents, use of $\eta^2Co_2(CO)_6$ acetylene complexes as intermediates in synth of-, 1397
esperamicin and calicheamicin, synth of the bicyclo[7.3.1]enediyne core by a non cobalt mediated route, 1519
esperamicinone, aglycone of esperamicin A_1 enediyne antitumour antibiotic, synth based on asymmetric epoxidation of a quinone monoketal, 11391
2-[(4-fluorophenylsulfonyl)methyl]carbapenem carboxylate, synth involving addition-elimination ring closure of an iodovinyl sulfone as the key step, 12085
kinamycin antibiotics; synth of hydroxy-substituted benzo[*b*]carbazoloquinone cyanamides as intermediates towards –, 10893
lissoclinotoxins, antibiotic polysulfur derivs from the tunicate *Lissoclinum perforatum*, revised structure of lissoclinotoxin A, 5323
moenomycin A, inhibitor of transglycosylase, methods for removal and oxidation of the lipid moiety, 5299
moenomycin A, structural analogues with a D-glucose-derived unit F, synth and enzyme inhibiting properties, 2029
cis monobactams through electrophilic amination of chiral 3-hydroxyesters, 11967, 11983
neocarzinostatin, enediyne antitumour antibiotic, synth and chem of a functional analogue of - chromophore; 1,5-hydro-gen atom transfer relevant to mechanism and cleavage selectivity of diyl based DNA cleaving agents, 1419
neocarzinostatin (NCS), antitumour antibiotic, apoprotein-assisted cyclisation of neocarzinostatin chromophore, 1311
neocarzinostatin (NCS), antitumour antibiotic, synth and binding of simple neocarzinostatin chromophore analogues to the apoprotein, 1327
oxabicyclo[7.2.1]enediyne containing an *ortho*-methoxybenzyl group at the anomeric position, synth from methyl-2,3-anhydro-α-D-lyxofuranoside, 1435
phloeodictines A1-7 and C1-2, antibiotic and cytotoxic guanidine alkaloids from the New Caledonian sponge *Phloeodictyon* sp., structures, 3415
pramanicin, antimicrobial agent from a fungal fermentation derived in grass, structure, 1675
pristinamycin I^A and related streptogramins, electrochemical reduction of – synth of des-(3-hydroxypicolinoyl)-pristinamycin I^A, 6307

pseudomonic acid, antibiotic involving competitive inhibition of isoleucine t-RNA synthetase, modifications at C-12 to C-14, 10739
(−)-quinocarcin, antitumour antibiotic, synth of ABE and ABC ring systems, D-ring fragments and total synth, 6193, 6209, 6221, 6239, 6259
saframycins, synth of ABC ring of safracins in approach to the total synth of saframycins, 3915
shikonin from *Lithospermum erythrorhizon*, naphthoquinone pigment with antitumour, antibacterial and anti-inflammatory props, biotransformation by human intestinal bacteria, 3081
synth of (2*S*,3*S*)-3-hydroxyleucine as precursor to cyclodepsipeptides, 9181
tautomycin, antibiotic and antifungal from *Streptomyces spiroverticillatus*, synth of the 2,3-disubstituted maleic anhydride segment, 8969
thiotipin, novel thiopeptide with a *tip*A promoter inducing activity produced by *Streptomyces* sp. DT31, structure and biological activity, 11659
tilivalline, pyrrolo[2,1-*c*][1,4]benzodiazepine from *Klebsiella pneumoniae* var. *oxytoca*, effect of zinc halides on stereoselectivity of Mannich cyclisation in synth, synth and epimerisation of, 9775, 9781
WS-5995-B, an anticoccidial antibiotic from *Streptomyces auranticolor*, synth *via* coupling of 3-bromo-5,6,7,8-tetrahydrojuglone and 3-methoxy-5-methyl anthranilic acid, 2543
see also Carbapenems, Cephams and cephems

Antifeedants
(±)-aphidicolin, − from fungus *Cephalosporium aphidicola* Petch, formal synth by successive intramolecular Diels-Alder reactions, 10183
azadirachtin, limonoid antifeedant from *Azadirachta indica*; structural determination using the Lsd-program assisted NMR analysis, 12267
derivs of 6,19-oxygenated 4α,18-epoxy-*neo*-clerodanes, diterpenoids from *Teucrium*, antifeedant activity, 5451
eriocephalin, *neo*-clerodane diterpenoid, base-catalysed reactions of − giving *neo*-clerodane derivs with insect antifeedant activity, 13553
from *Azadirachta indica*; synth of model compds of azadirachtin by oxidative ring contraction reaction, effect of remote substituents, 11553
lintenolides, pentacyclic bioactive sesquiterpenes from the Caribbean sponge *Cacospongia* cf. *linteiformis*, ichthyotoxicity and antifeedant activity, 849
neo-clerodane diterpenic acids from *Cistus populifolius*, precursors to new antifeedant agents, absolute stereochemistry, 10791
pereniporin B, polygodial and warburganal, bioactive drimanes, semisynth from zamoranic acid, 10995
(−)-polygodial and 3β-acetoxydrimenin, drimane sesquiterpenes, total synth from *S*-(+)-carvone *via* decalones, 10073, 10083

Antifungals
ambruticine, antifungal, antibiotic, construction of the right hand portion by intramolecular silyl-modified Sakurai reaction, 7141
7-β-hydroxyeudesmanolides with antifungal activity against *Botrytis cinerea*, 10531
millecrone A and B, millecrol A and B, four sesquiterpenes from the South African nudibranch *Leminda millecra*, 3065
nakijiquinones A and B, antifungal sesquiterpenoid quinones with an amino acid residue, isolation from Okinawan sponge *Spongiidae*, structures, 8347
pentathiepins and trithianes from two *Lissoclinum* sp. and a *Eudistoma* sp., inhibitors of protein kinase C, 12785
pramanicin, antimicrobial agent from a fungal fermentation derived in grass, structure, 1675
tautomycin, antibiotic and antifungal from *Streptomyces spiroverticillatus*, synth of the 2,3-disubstituted maleic anhydride segment, 8969

Antihistamines
euryspongiols, ten new hydroxylated 9,11-secosteroids with antihistaminic activity from the sponge *Euryspongia* sp., stereochemistry and reduction, 3813

Antivirals
acyclovir and its 6-deoxy derivative, synth from 2-amino-6-(4-chlorophenylthio)-9*H*-purine, 9195
allophenylnorstatine, β-amino-α-hydroxy acid found in kynostatin class of HIV-1 protease inhibitors, synth, 3975
(±)-aphidicolin, antibiotic with activity against Herpes simplex Type I virus from fungus *Cephalosporium aphidicola* Petch, formal synth by successive intramolecular Diels-Alder reactions, 10183
(±)-aphidicolin, antiviral and antitumour tetracyclic diterpene from *Cephalosporium aphidicola*, synth, 11153
[1-[3',5'-bis-*O*-(t-butyldimethylsilyl)-β-D-arabino- and β-D-ribofuranosyl]cytosine]-2'-spiro-5"-(4"-amino-1",2"-oxathiole-2",2"-dioxide), analogues of anti-HIV-1 agent TSAO-T, synth, 11013
2',3'-deoxy-2'- or 3'-C_2-branched- or 2',3'-α-fused-isoxazolidine nucleosides as inhibitors of HIV-reverse transcriptase, 5279
HIV, isomeric dideoxynucleosides with *S,S* absolute stereochemistry as potential antiviral agents, synth, 7747
HIV, michellamines A-C, C_2-symmetric antivirals for HIV, synth by biomimetic oxidative dimerisation of korupensamine A, 9643
HIV, peyssonol A and B and hyatellaquinone, sesquiterpene hydroquinones from the alga *Peyssonnelia* sp. and *Hyatella intestinalis* sp., inhibitors of reverse transcriptase of HIV, 4179
HIV, phosphodiester of 3β(7β-hydroxycholesterol) and of 5'(3'deoxy,3'azidothymidine), synth by phosphorylation, 1173
HIV, 3'-*C*-substituted-3'-nitromethyl-*ribo*-thymidines, synth as inhibitors of HIV-reverse transcriptase, 4167
HSV-1, 5-bromoethynyl-2'-deoxyuridine, synth from dibromovinyluracil, antiviral activity, 8371
[(2'*S*,3'*S*)-bis(hydroxymethyl)azetidin-1-yl] pyrimidine nucleosides, synth as antiviral agents, 13335
6-methyl-3-methoxy-4-*O*-acyloxy and 6-methyl-2,4-di-*O*-acyloxypyrimidine derivs as new acylation reagents and inhibitors of uracil DNA glycosylases, 3603
purine and pyrimidine analogues of 1,4-anhydro-2-deoxy-D-arabitol and 1,4-anhydro-2-deoxy-3-hydroxymethyl-D-arabitol, antiviral activity towards HSV-1, HSV-2, HCMV and HBV, 10167
9-*H*-pyrimido[4,5-*b*][1,4]diazepine derivs against Junin and Tacaribe viruses, 13511
topsentiasterol sulfates A-E, antimicrobial sterol sulfates from marine sponge *Topsentia* sp., structures, 7765
variolin B, antitumour and antiviral compd from Antarctic sponge *Kirkpatrickia varialosa*, structure, 3987

Arenes
arene-catalysed lithiation of 1,4-dichlorobut-2-enes and 3,4-dichlorobut-1-ene catalysed by arenes, reaction with electrophiles, 7857
1-arenesulfonyl-4-nitroimidazoles, reactions with aniline in aqueous methanol solution, 5741
benzo[*a*]pyrene 4,5-oxide and 3-methylcholanthrene 11,12-oxide, regioselectivity in transformation to corresponding β-amino-alcohol derivs, 8505
ferrocenylheteroarenes, electrophilic substitutions on, 5765
iodoarenes by reaction of aromatic compds with iodine and a mercury(II) salt, 5139
nitroarenes, reaction with dithiane derivs, oxidative versus vicarious nucleophilic substitution of hydrogen, 4913
reductive activation of arenes; alkylation of 9-cyanoanthracene two-electron reduction products in liquid ammonia, 10011
N-(trifluoromethylsulfonyl)arenesulfonimidoyl- and *N,N'*-bis(trifluoromethylsulfonyl)arenesulfonodiimidoyl chlorides, reactions with ammonia, 6891

Aromatisation
of Hantzsch 1,4-dihydropyridines using potassium permanganate, 2479

Arsenic and compds
1-alkoxycarbonylalkylidenetriphenylarsoranes, prep and reactions of, 13765
cyclic chlorophosphites and arsenites, oxidative addition reactions with diols

and 1,2-quinones, synth of phosphocin oxides, 6989
Arylation
palladium-catalysed - of enol ethers with aryl triflates; ligand control of selection for α- or β-arylation of [2-(dimethylamino)ethoxy]ethene, 285
palladium-catalysed intermolecular arylation of functionally-substituted cycloalkenes by aryl iodides, 305
photo-induced − of β-dicarbonyl compds by arylazosulfides, use in synth of methyl labelled 2-arylpropionic acids, 8117
Asymmetric synthesis
of allophenylnorstatine, β-amino-α-hydroxy acid found in kynostatin class of HIV-1 protease inhibitors, 3975
of 1-amino-2-phenyl(alkyl)cyclopropanecarboxylic acids by diastereoselective cyclopropanation of highly functionalised monochiral olefins, 12443
of β-aminotetralins by electrophilic amination by di-t-butyl azodicarboxylate, 10909
of an isomer of podophyllotoxin, 10829
catalytic intramolecular hydrosilation and hydroacylation using catalysts of the type [Rh(chiral diphosphine)]$^+$, 4335
of cyanohydrins by enantioselective addition of trimethylsilyl cyanide to aldehydes using a chiral Schiff base-titanium alkoxide complex as catalyst, 4385
of (*S*)-fenfluramine using Sharpless epoxidation of allylic alcohols, 171
of (1*R*,2*S*)-2-fluorocyclopropylamine, synth by cyclopropanation of *N*-benzyl-*N*-vinylcarbamates with zinc-monofluorocarbenoid, 3889, 3905
of highly functionalised 2-amino-4-aryl-4*H*-pyrans, 3509
of β-hydroxy ketones by palladium catalysed asymmetric 1,4-disilylation of αβ-unsaturated ketones, 335
of (2*S*,3*S*)- and (2*R*,3*R*)-3-hydroxyleucine, 9181
of 3-hydroxyperoxy-2-methylidene butenoates by stereoselective dioxygenation of enoates, 8929
of methyl 3-(3-carboxy-2-iodomethylpropyl)-1-methyl-2-oxo-cyclohex-3-enecarboxylate, a key synthetic precursor for (+)-strigol and sorgolactone, 6839
of methylenecyclobutanes and their transformation to medium-sized carbocyclic compds, 4529
of 3,3-diphenyl-2-methylalanine by enolate trapping of lithium (1*S*,2*R*,4*R*)-10-dicyclohexylsulfamoylisobornyl-2-cyano-3,3-diphenylpropanoate followed by rearrangement, 9837
of 2,5-disubstituted pyrrolidines from (2*R*)- or (2*S*)-2-t-butoxycarbonylamino-3-phenylsulfonyl-1-(2-tetrahydropyranyloxy) propane and homochiral glycidyl triflate, 7093
opportunities in −, an industrial prospect, 3639
optically active 2'-diphenylphosphino-1,1'-binaphthyls (MOP's) having various functional groups, synth and use in − for their high enantioselectivity, 4293
of substituted dihydropyrans by intramolecular heterocycloaddition of chiral vinyl ethers, 9037
see also Enantiocontrol, Enantioselection
Aza compds
azaaromatics, ethynylation of − using bis(tributylstannyl)acetylene in the presence of alkyl chloroformate, 13089
(*rac-erythro*)-α-[(*S,R*)-1-azabicyclo[2.2.2]oct-1-yl]-2,8-bis(trifluoromethyl)quinoline-4-methanol, a quinuclidinyl analogue of antimalarial agent mefloquine, synth, 3327
3-azabicyclo[3.1.0]hexane ring system, synth using tandem Michael-S_N2 reaction, 9943
6-azabicyclo[3.2.0]hept-2-ene derivs as potential anti-bacterial agents and β-lactamase inhibitors, synth and biological evaluation, 12049
9-azabicyclo[4.2.1]nonan-1-ols (norhomotropan-1-ols), *N*-alkyl and 7,8-dehydro-derivs and oxabicyclic analogues, tautomerism and synth, 11039
2-azadienes derived from cysteine and serine methyl esters and aldehydes, Diels-Alder reactions of, 13709
azalide antibiotics; conformational analysis of 9-deoxy-9a-aza-9a- and 9-deoxo-8a-aza-8a-homoerythromycin A 6,9-cyclic iminoethers, 12201
azasugars from the corresponding sugar lactones, 4215

2-azaxanthones by [4+2]cycloaddition of 2-alkyl-3-iminomethylchromones with *N*-phenylmaleimide, 4905
3-carbomethoxy-2-aza-1,3-butadiene derivs, reactions with dienophiles, 12375
1-dimethylamino-1-azadienes, ultrasound-assisted Diels-Alder reactions with electron-defficient dienophiles, 10047
1,1-diphenyl-2-aza-1,3-butadiene derivs, substituent effects on 1,3-dipolar cycloadditions to, 3773
2,4-disubstituted 1-aza-adamantanes, synth *via* *N*-protected 3-azabicyclo[3.3.1]non-6-ene, 8853
oxazaborolidine, synth by asymmetric reduction involving α,α-diphenylpyrrolidinemethanol and borane complexes generated using the $I_2/NaBH_4$ system, 6411
N-oxides of azaanthraquinones by *N*-oxidation of heterocyclic quinones, 9505
2- and 4-oxo-1*H*-1-azaanthracene-9,10-diones, synth from 2-amino-1,4-naphthoquinone, 12941
2-substituted 3,4-dimethyl-5-phenyloxazaphospholidine derivs, synth involving coupling reaction to secure the initial phosphorus-oxygen bond followed by ring closure, 6155

Azepines
4-amino-1,4,6-trideoxy-1,6-imino-D-mannitol dihydrochloride, synth as inhibitor of α-mannosidase, 1033
1,4-benzodiazepin-2,5-diones, synth by cyclisation of dipeptides derived from Boc anthranilic acid and α-amino acid methyl esters or by reaction of *N*-carboxy α-amino acid anhydrides with Boc anthranilic acid, 9051
(±)-clavizepine, benzopyranobenzazepine alkaloid from *Corydalis claviculata*, total synth, 10215
3-cyano- and 7-cyano-3*H*-azepin-2-(1*H*)-ones by photo-induced ring expansions of *o*-azidobenzonitriles, 5515
5-hydroxychromen[3,4-*b*]azepines, synth from ene reaction of 4-(2-alkenylamino)-3-formyl-2(2*H*)-chromenones, 1063
pyrrolobenzoxazepine ring construction through metalation and electrophilic substitution of *N*-(2-hydroxymethylphenyl)pyrrole, 2071

Azetidines
4,4'-di-t-butylbiphenyl-catalysed reductive opening of − with lithium, synth of 3,*N*-dilithioalkylamines, 5775
[(2'*S*,3'*S*)-bis(hydroxymethyl)azetidin-1-yl] pyrimidine nucleosides, synth as antiviral agents, 13335

Azetidinones
bicyclic β-lactams by intramolecular nucleophile transfer reactions of *N*-tosyloxy β-lactams, 8275
N-chloro β-lactams, prep and reactions of, 11091
β-lactams; trapping of the quinone imine intermediate in reaction of 1-(4-methoxyphenyl)azetidin-2-ones with cerium-(IV) ammonium nitrate (CAN), 4185
β-lactams by condensation of the tin enolates of 2-pyridylthioesters with imines, 5821
β-lactams by condensation of titanium enolates of 2-pyridyl thioesters with imines bearing a chiral auxiliary, 9471
β-lactams by condensation of titanium enolates of 2-pyridylthioesters with imines; influence of the imine structure on the *trans/cis* stereoselectivity, 2939
1-(4-methoxyphenyl)azetidin-2-ones, reaction with cerium(IV) ammonium nitrate (CAN), trapping of the quinone imine intermediate with chloride and iodide ions, 4185

Azides
alkyl azides from hydrocarbons by utilization of the $GoAgg^{IV}$ system in the presence of sodium azide, 47
o-azidobenzonitriles, photo-induced ring expansions to 3-cyano- and 7-cyano-3*H*-azepin-2-(1*H*)-ones, 5515
tandem reactions of one mole of − and three molecules of alkyl vinyl ketone, synth of spiropyrazolines, 12133

Azines
azinium-*N*-(2'-azinyl)aminides, synth, structure and reactivity, 4995
density functional calculations on, 2405
1,4-di-(3-azabicyclo[3.1.0]hexyl)-piperazines, synth as building blocks for oligoamines, 715, 731

Aziridines
(2*S*)-aziridine-2-carboxylic acid containing peptides, synth, 1717

oxaziridinium salt derived from dihydroisoquinoline as the oxygen transfer reagent for amines, synth of nitroso derivs, nitro compds, *N*-oxides and nitrones, 12185
C_2-symmetric aziridines as chiral auxiliaries for asymmetric alkylation and aldol reactions of amide enolates, 9797

Azirines
2-phenyl-3-(2-pyridylcarbonyl)azirine by photoinduced ring transformation of pyrido[1,2-*b*]pyridazinium-4-olate, 4699
(*Z*)-18-[4-[3(trifluoromethyl)diazirinyl]-phenyl]-9-octadecenoic acid, photoactivatable, synth for protein kinase labelling, 3785

Azo compds
(*o*-alkylaryl)azosulfides, treatment with potassium t-butoxide, synth of 1*H*-indazoles, 3529
arylazosulfides containing electron withdrawing groups, photochemical decomposition in the presence of the anion of dimethyl malonate, synth of 2-arylmalonate derivs and transformation into respective profens, 8117
azomethine ylids generated from 2-(t-butyl)-3-methylimidazolidin-4-one, 1,3-cycloaddition to activated alkenes, 189

Azocines
1,2,3,4,5,6-hexahydro-3-benzazocine-4,6-di one and 2-substituted-2,5,6,7-tetrahydro-4-benzazonine-1,3-(4*H*)-dione, synth from substituted alkylthio octems and nonems, 9167
6,11b-methanopyrrolo[2,3-*e*][1]benzazocine tetrahydroquinoline deriv, synth by reaction of congested α-(*O*-nitrophenyl)ketones with tris(dimethylamino)methane, 9769

Azulenes
1-acetyl-3α,6-dimethyl-hexahydroazulene, synth as intermediate for the prep of terpenoids with bicycle[5.3.0]decane system, 12655
thieno[3,4-*d*]borepin and thieno[2,3-*d*]-borepin, conjugation characteristics, 6495
trimethylhydroazulenic skeleton of the lactarane sesquiterpenes, regioselective synth, 9657

Baeyer-Villiger reaction
oxidation of bicyclo[3.2.0]hept-3-en-6-ones derived from 3-hydroxy-6-heptenoic acids, synth of 3,3a,4,6a-tetrahydro-2*H*-cyclopenta[*b*]furan-2-ones, 7645
ring cleavage of brendane derivs, synth of functionalised quinane system, 539

Barbier reaction
reductive decyanation of nitriles with lithium and 4,4'-di-t-butyl-biphenyl, synth of organolithium reagents, 3447

Baylis-Hillman reaction
of dialdehydes with methyl acrylate followed by acetylation of the resulting diols, synth of [5,7]orthocyclophanes, [7,7]cyclophanes and corresponding macrobicyclic cryptophanes, 7815

Benzazepines
(±)-clavizepine, benzopyranobenzazepine alkaloid from *Corydalis claviculata*, total synth, 10215

Benzimidazoles
1,3,6-benzothiadiazepino[3,2-*a*]benzimidaz ole derivs and [5+5] rigid bicyclic guanidines by reaction of bis(iminophosphorane) with isocyanate, 10029
imidazole and benzimidazole addition to quinones, formation of *meso*- and d,l isomers of 2,3-bis(benzimidazol-1'-yl)-1,4-dihydroxybenzene, 12489
2-substituted - from *N,N'*-diacyl-1,2-benzenediamines, use of mass spectrometer as a probe, 2485
2-substituted-4-methylbenzimidazoles, regioselectivity of alkylations of, 5535

Benzobarrelenes
bromination of–, rearrangement of barrelene skeleton, 10555
tetramethoxy–, photooxygenation of –, synth and thermal decomposition of bisdioxetane and endoperoxide, 9009

Benzodiazepines
tilivalline, pyrrolo[2,1-*c*][1,4]benzodiazepine from *Klebsiella pneumoniae* var. *oxytoca*, effect of zinc halides on stereoselectivity of Mannich cyclisation in synth, synth and epimerisation of, 9775, 9781

Benzofurans
2,3-disubstituted benzofuran epoxides prepared by dimethyldioxirane oxidation, rearrangement to benzofuranones, 11441

interconversion of 3,4-dihydro-4-formyl-2-hydroxy-2*H*-benzopyran and 2,3,3a,8a-tetrahydro-2-hydroxyfuro[2,3-*b*]benzofuran moieties to generate furo[2,3-*b*]-benzofuran skeleton of (±)-aflatoxin B_1, 7597
3-phenyl-2-methylbenzofuran epoxide, oxidation of – by dimethyldioxirane and oxodiperoxomolybdenum complex, generation of 1,2-dioxetane decomposition products, 8393
2-Benzofurans, *see* Isobenzofurans

Benzonitriles
o-azidobenzonitriles, photo-induced ring expansions to 3-cyano- and 7-cyano-3*H*-azepin-2-(1*H*)-ones, 5515

Benzopyrans
enol derivs of 2,3-dihydrobenzopyran-4-ones, electron transfer oxidation of–, 7635
interconversion of 3,4-dihydro-4-formyl-2-hydroxy-2*H*-benzopyran and 2,3,3a,8a-tetrahydro-2-hydroxyfuro[2,3-*b*]benzofuran moieties to generate furo[2,3-*b*]-benzofuran skeleton of (±)-aflatoxin B_1, 7597
3-nitro-2-phenyl-2*H*-1-benzopyrans, 1,3-dipolar cycloadditions to diazoalkanes, synth of benzopyranopyrazole derivs, 4623

Benzoquinones
mixed crystals between benzoquinones and polymethylbenzenes, solid-state photochemistry of, 13617

Benzothiophenes
benzo[*b*]thiophen-3-ones on ring contraction of sulfenamides derived from thiochroman-4-ones, 827

Benzotriazoles
benzotriazolylmethylaminosilanes as azomethine ylid equivalents, cycloadditions with dipolarophiles to give pyrrolidines or 2,5-dihydropyrroles, 12571
(α-benzotriazolylvinyl)ethers, benzotriazole-assisted β-lithiation of–, PM3 and MNDO calculations, 6005

Benzoxazines
pyrrolobenzoxazepine ring construction through metalation and electrophilic substitution of *N*-(2-hydroxymethylphenyl)pyrrole, 2071

Benzylation
oxidative debenzylation of substituted benzyl ethers using dimethyldioxirane, synth of alcohols, 9983

Bergman reaction
cycloaromatization of enetetrayne containing compds, 1503

Betaines
pyrido[1,2-*b*]pyridazinium-4-olate, photolytic behaviour, 4699

Biaryls
functionalised – by cross-coupling reactions of aryl(halo)silanes with aryl halides, 8301

Bicyclic aliphatic compds
bicyclic silyl enol ethers, Rubottom oxidation of –, synth of bicyclic α-hydroxy ketones, 12903
bicyclo[3.2.0]hept-3-en-6-ones from 3-hydroxy-6-heptenoic acids, subsequent oxidation to 3,3a,4,6a-tetrahydro-2*H*-cyclopenta[*b*]furan-2-ones, 7645
bicyclo[3.2.0]hept-3-en-6-ones, synth from 3-hydroxy-6-alkenoic acid and subsequent synth of grandisol and lineatin, 3235
bicyclo[4.3.0]nonane systems by tandem ring expansion and insertion reaction of alkenic cyclobutanols mediated by palladium, 10391
bicyclo-[3.3.0] and [4.3.0] skeletons by palladium(0)-catalysed cyclisation-carbonylation of 2,7-octadienyl acetate and homologues, 5705
bicyclopropenyls, synth by elimination of β-halocyclopropylsilane precursors over solid fluoride, 10693
(+)- and (−)-calystegine B_2, polyhydroxylated nortropane derivs, total synth from D-glucose *via* Ferrier reaction, 10443
6-*exo*-cyano-3,8-dioxabicyclo[3.2.1.$0^{2,4}$]oct-6-*endo*-yl esters, selectivity between pinacolic rearrangement and intramolecular displacement in the acid-promoted epoxide ring opening of, 2469
decalin derivs by asymmetric Heck reaction of alkenyl iodides in the presence of silver salts, importance of silver salts, 371
1,8-dihydroxytetralins, synth by tandem reduction/intramolecular hydroxyalkylation of 4-(3-hydroxyphenyl)alkanoates, 11945

functionalised chiral bicyclo[3.3.1]nonanes, synth by a regiospecific radical annulation strategy, 8781
2-[(*Z*)-haloiodomethylidene]bicyclo[3.2.1]-octan-3-one and 3-[(*Z*-haloiodomethylidene]bicyclo[3.2.1]octan-2-one by ring expansions of 2-haloethynyl-2-norbornals, 11793
(±)-α-himachalene, sesquiterpene from essential oil of Himalayan cedar *Cedrus deodara Loud*, total synth involving [2+2] photoaddition and regioselective β-scission of alkoxy radicals, 7771
7-iodobicyclo[4.1.0]heptane, $S_{RN}1$ reactions with carbanions; stereoselective C-C bond formation on cyclopropane rings, 9267
oxabicyclo[7.2.1]enediyne containing an *ortho*-methoxybenzyl group at the anomeric position, synth from methyl-2,3-anhydro-α-D-lyxofuranoside, 1435

Bicyclic heterocyclic compds
(*rac-erythro*)-α-[(*SR*)-1-azabicyclo[2.2.2]oct-1-yl]-2,8-bis(trifluoromethyl)quinoline-4-methanol, a quinuclidinyl analogue of antimalarial agent mefloquine, synth, 3327
3-azabicyclo[3.1.0]hexane ring system, synth using tandem Michael-S_N2 reaction, 9943
6-azabicyclo[3.2.0]hept-2-ene derivs as potential anti-bacterial agents and β-lactamase inhibitors, synth and biological evaluation, 12049
bicyclic β-lactams by intramolecular nucleophile transfer reactions of *N*-tosyloxy β-lactams, 8275
bicyclic lactones and ketones by Lewis acid catalysed cyclisation of tetrahydropyranones, 8445
bicyclic tetronic, tetramic and thiotetronic esters, Michael and substitution reactions of, 8237
by intramolecular cycloaddition of chiral thiaalkenyl nitrones, 3929, 3943
α-camphidone, conversion to (1*R*,*cis*)-3-aminomethyl-1,2,2-trimethylcyclopentane-methanol, an intermediate in the synth of carbocyclic nucleoside analogues, 2175
1,8-diazabicyclo[5.4.0]undec-7-ene (DBU) and 1,5-diazabicyclo[4.3.0]non-5-ene (DBN), nucleophilic behaviour in reactions with 4-halo-3,5-dimethyl-1-nitro-1*H*-pyrazoles, 865
indolizidine derivs by asymmetric Heck reaction of alkenyl iodides in the presence of silver salts, importance of silver salts, 371
upial, marine sesquiterpene from *Dysidea fragilis* sp., total synth from D-mannitol, 661

Biogenesis
of the carapolides of *Carapa grandiflora* (Meliaceae), 9343

Biologically active compds
(+)-altholactone and its three isomers, synth from D-gulonolactone and D-mannose, activity against P388 leukemia, 8685
1-amino-2-phenyl(alkyl)cyclopropanecarboxylic acids, asymmetric synth by diastereoselective cyclopropanation of highly functionalised monochiral olefins, 12443
1-aminobenzylphosphonic acids from benzylidenediphenylmethylamines, synth for use as structural units in antithrombotic tripeptides, 5099
analogues of parabactin A and agrobactin A, synth to chelate iron and to promote the growth of iron-starved *Paracoccus denitrificans*, 11781
antiinflammatory Chinese medicine Shu Wu Jia, synth from a triterpenoid saponin derived from *Nothopanax davidii* Harms (*Araliaceae*), 11601
aplysinopsin alkaloids of marine origin, synth by iminophosphorane mediated imidazole ring formation, 2241
6-azabicyclo[3.2.0]hept-2-ene derivs as potential anti-bacterial agents and β-lactamase inhibitors, synth and biological evaluation, 12049
azadirachtin, antifeedant from *Azadirachta indica*, synth of derivs of – containing fluorescent or immunogenic reporter groups, 8871
benzopyranopyrazole derivs, antimicrobial activity, 4623
bilirubin, neurotoxic pigment of jaundice, synth and properties of pentapyrrole analogues of bilirubin and biliverdin, 8579

botcinolide, a new phytotoxic trihydroxylated nona-lactone esterified with 4-hydroxy-2-octenoic acid, a metabolite of the mould *Botrytis cinerea*, structure, 11585
5-bromoethynyl-2'-deoxyuridine, pyrimidine nucleoside, synth from dibromovinyluracil, antiviral activity, 8371
cardiac drug (−)-denopamine, (−)-tembamide, (−)-aegeline and bronchodilator salbutamol, synth from *p*-methoxy or *p*-allyloxybenzaldehyde involving hydrocyanation of the aldehydes, 13739
castanospermine, synthetic functionalisation at C-6, synth of australine and analogues, 2131
chromomoric acid C-I and C-II methyl esters from *Chromolaena morrii* and *Chromolaena chasleae*, total synth and structural revision, 12337
containing the 1,8-dihydroxytetralin system, synth of tetralins by tandem reduction/intramolecular hydroxyalkylation of 4-(3-hydroxyphenyl)alkanoates, 11945
cyclic depsipeptide calcium blocker from *Hapsidospora irregularis*, leualacin, conformational analysis by NMR spectroscopy, 6537
cyclopropamitosenes (7-methoxy-1,2-cyclopropapyrrolo[1,2-*a*]indoles), bioreductive anticancer agents, synth of − and related indolequinone, 7657
4'-deoxy C-3'-homo anthracyclines, synth from (*S*)-propylene oxide, cytotoxic activity, 1165
didemnilactones A and B and neodidemnilactone, fatty acid metabolites from tunicate *Didemnum moseleyi* (Herdman), structures and biological activities, 7385
19,20-epoxycytochalasin Q and deacetyl analogue, cytotoxic cytochalasins from the fungus *Xylaria obovata*, structures, 5615
erylusamines A-E from marine sponge *Erylus placenta*, isolation as interleukin-6 receptor antagonists, structure, 1105
FK 506 from *Streptomyces tsukubaensis* 9993, prep of des-28-(cyclohexyl)methylene-28-oxo-ascomycin, chemoselective removal of the cyclohexyl residue of ascomycin, 13655
homochiral epoxybenzocyclooctenamines, benzomorphan analogous CNS agents, prep from enol ester, 8003
11α-hydroperoxy diacetyl hederagenin, triterpenoid deriv from *Serjania triquetra* (Sapindaceae), isolation and relay synth, 3869
4-hydroxynon-2-enal, a cytotoxic lipid peroxidation product, and its C_5-analogue 4-hydroxypent-2-enal, synth and stereoanalysis, 10245
5-hydroxytiagabine, a human metabolite of the GABA uptake inhibitor tiagabine, synth from 2-bromo-3-methylthiophene, 8699
IM-2, the autoregulator from *Streptomyces* sp. FRI-5, synth from 2-acyl-3-hydroxymethyl-4-butanolide, 10849
(−)-kjellmanianone cyclopentenoid from (+)-tricyclo[5.2.1.$0^{2,6}$]decadienone 2-carboxylic ester, 10597
Leshmaniacides by metalation of pyrimidines involving halogen migration, unusual halogen-lithium exchange with LTMP, 10299
lissoclinotoxins, antibiotic polysulfur derivs from the tunicate *Lissoclinum perforatum*, revised structure of lissoclinotoxin A, 5323
microginin, angiotensin-converting inhibitory peptide from blue-green alga *Microcystis aeruginosa*, total synth, 11303
monosulfur and monoselenium analogues of psoralens (derivs of furo[3,2-*g*][1]-benzopyran-7-one) as DNA photoinactivating agents, 9315
β-naltrexol, β-naloxol, β-naltrexamine and related morphine series compds, stereoselective synth by application of the Mitsunobu reaction, 9757
nitramarine alkaloid by transmetalation of 1,9-dimetalated β-carboline followed by cross-coupling reaction with 2-chloroquinoline, 12329
(±)-oxerine, monoterpene alkaloid from *Oxera morieri*, total synth from 3-bromopyridine, 13575
(*S*)-(−)-pindolol and [3'-^{13}C]-(*R*)-(−)-pindolol, effective β-blockers, synth utilising a lanthanum-lithium-(*R*)-BINOL catalysed nitroaldol reaction, 12313
porphyrin building blocks for modular

construction of bioorganic model systems, synth by reaction of the appropriate aldehyde with pyrrole, 8941
O-protected deaminotunicaminyluracil, synth, 2965
pseudomonic acid, antibiotic involving competitive inhibition of isoleucine t-RNA synthetase, modifications at C-12 to C-14, 10739
pseudopterolide, diterpenoid derived from the Red Sea whip *Pseudopterogorgia acerosa*, potential implications for its biological activity, 9223
pyrido[2,3-*d*]pyrimidine derivs with calcium channel antagonist activity, synth by reaction of arylmethyleneaceto-acetates with aminopyrimidines, structures, 8085
9-*H*-pyrimido[4,5-*b*][1,4]diazepine derivs, anticancer and antiviral activity of, 13511
quinolonecarboxylic acid, DU-6859, synth of (1*R*,2*S*)-2-fluorocyclopropylamine component, 3889, 3905
ring expansion of 4-(1-pyrrolo)cyclobutenones to indolizine-5,8-diones, key step in synth of (±)-septicine from dimethyl squarate, 6173
seco-limonoids, potent new cell adhesion inhibitory compds from the root of *Trichilia rubra*, structure, 11369
sinharines, penimides and illukumbins, sulfur containing amides from *Glycosmis cyanocarpa*, synth and corrected structures, 6279
somatostatin, tetradecapeptide from ovine hypothalamic extracts, synth of analogues incorporating nucleo amino acids, 7485
sphinganine analogues modified in the head group, synth and study of sphingolipid biosynthesis inhibitory activity, 13425
sphingosines, synth of 1,2,3-trihydroxy-4*E*-octadecene as key intermediates for the synth of sphingosines, 10727
strychnine, prep of a hexacyclic enamine intermediate for conversion into Strychnos alkaloids, 2681
5-*O*-sulfamoyl nucleosides from 5-*O*-sulfamoyl-1,2,3-tri-*O*-acetyl-β-D-ribofuranose using a modification of the Vorbrüggen-Hilbert-Johnson reaction conditions, 6825
synth and reactions of a family of DNA-DNA affinity cross-linking agents with DNA, 12065
tautomycin, antibiotic and antifungal from *Streptomyces spiroverticillatus*, synth of the 2,3-disubstituted maleic anhydride segment, 8969
taxoids, synth of intermediates toward the synth of taxoids by [2+2] photocycloaddition between enones and 2,3-dihydropyran, 9649
3',5'-*O*-bis- tetrahydropyranyl, trimethylsilyl and t-butyldimethylsilyl derivs of 5-bromo-2'-deoxyuridine, synth, characterisation and reactivity, 1699
theonezolides B and C, macrolides with various functionalities from Okinawan sponge *Theonella* sp., structures, 8355
5-*N*- and 9-*N*-thioacylated sialic acids, synth by *N*-thioacylation of neuraminic acid methyl α-glycoside, 7445
thiotipin, novel thiopeptide with a *tip*A promoter inducing activity produced by *Streptomyces* sp. DT31, structure and biological activity, 11659
topsentiasterol sulfates A-E, antimicrobial sterol sulfates from marine sponge *Topsentia* sp., structures, 7765
ent-trichothecene, sesquiterpene of fungal origin, enantioselective synth, 1651
trihydroxylated carbocyclic nucleosides, synth from *cis*-3,4-bis(benzyloxymethyl)-cyclobut-1-ene, 13145
see also Chemotherapy, Drugs, Hormones, Insecticides, Pharmacologically active compds, Pheromones, Phytoalexins, Toxins

Biomimetic reactions
biomimetic oxidation of the antimelanoma agent 4-*S*-cysteaminylphenol and related catechol thioethers, isolation and reactivity of novel dihydrobenzothiazine-quinones, 8757
11-methoxygelsemamide having a 1,2-secoindole system, synth from sarpagine type indole alkaloid gardnerine, 8363
oxidative dimerisation of korupensamine A, naphthylisoquinoline alkaloid, synth of michellamines A-C, C_2-symmetric antiviral, 9643
synth of *Gelsemium* alkaloid, 11-methoxy-

19(*R*)-hydroxygelselegine, from sarpagine-type indole alkaloid gardnerine, 11813
synth of pyrido- and pyrrolo[2,3,4-*kl*]-acridines, marine related alkaloids, from β,β'-diaminoketones and a variety of cyclohexanediones and quinones, 12959

Biosynthesis
biotransformation of 8-methyl-*trans,trans*-cyclodeca-3,7-dien-1β-ol into 4aβ-methyl-1,2,3,4,4a,5,6,7,8,8aα-decahydronaphthalene-1,7β-diol by *Cichorium intybus*, 3169
of chrysomelidial and plagiodial, iridoid monoterpenes in larvae of leaf beetles *Phaedon amoraciae, Phaedon cochleariae, Gastrophysa viridula* and *Plagiodera versicolora*, 6859
of clavaminic acid from dihydroclavaminic acid *via* proclavaminic acid catalysed by clavaminic acid synthase, 8737
of glycosphingolipids, inhibitory activity of sphinganine analogues, 13425
of plant pheromones from marine brown algae phaeophyte *Cutleria multifada*, evidence for a spontaneous [1.7]-hydrogen shift and an 8πe electrocyclic ring closure, 10235
of the pseudobactin chromophore produced by *Pseudomonas fluorescens* from tyrosine, 9865
vitamin B_{12}; discovery of nature's pathway to, perspective, 13315

Boron and compds
(acyloxy)borane (CAB) complex as catalyst for asymmetric hetero Diels-Alder reaction, 4555
(acyloxy)borane (CAB) prepared *in situ* from tartaric acid and arylboronic acids as catalyst for asymmetric hetero Diels-Alder reactions, 979
alkylbis(2,6-dimethyl-4-methoxyphenyl)-boranes, synth and properties of, 13775, 13801
allyl- and crotylboronates, addition to aldehydes, development and application of a force field model of the transition state, 8815
allylborates for allylation of acetals, 871
boron analogues of biomolecules, 12521
3-borylpropenoic acid derivs, Diels-Alder cycloadditions of – and their use as synthetic equivalents of *E*-β-hydroxy acrylic acid and *E*-β-hydroxy vinylamine, 3397
computer-assisted design of chiral boron enolates; role of ate complexes in determining aldol stereoselectivity, 1227
α,α-diphenylpyrrolidinemethanol and borane complexes generated using the $I_2/NaBH_4$ system, use in asymmetric reductions, 6411
effect of hindered triorganoboranes on anionic butadiene polymerisations, 13829
1-halo-1-alkyl boronic esters, synth as precursors for novel thrombin inhibitors, 3803
hindered organoboron groups in organic chemistry, 13775, 13801, 13829
homochiral oxazaphospholidine-boranes, synth, 6155
organoboron, cross-coupling reaction with 2,3-alkadienyl carbonates, synth of 2-substituted 1,3-butadiene, 7961
thieno[3,4-*d*]borepin and thieno[2,3-*d*]-borepin, conjugation characteristics, 6495

Cage compds
$C_{24}H_{28}$ cage-functionalised alkenes, synth, characterisation and crystal density modelling, 1687
cage-type cyclophanes having a helically twisted and cylindrical internal cavity, specific molecular recognition by–, 13601

Calixarenes
diester-calix[4]arenediquinone receptor, synth, metal, ammonium and alkyl ammonium cation coordination chemistry and electrochemical recognition studies, 931
highly-substituted calix[4]arenes derived from *p*-cyanomethylcalix[4]arene, 4087
OH-depleted calix[4]arenes; influence of OH groups on the relative stability of calix[4]arene conformers, NMR spectroscopy and molecular mechanics, 13377

Carbamates
alkyl carbamate, transesterification to aryl carbamate, effect of varying the alkyl group, 10367
S-alkyl thiocarbamates from amines, carbon monoxide, elemental sulfur and alkyl halides in the presence of a

selenium catalyst, 5669
O-alkylselenocarbamates of various alcohols, synth and reactivity, 639
2,2'-bis-*O*-(*N,N*-dimethylthiocarbamato)-1,1'-binaphthalene, polymorphism and thermorearrangement of–, synth of 1,1'-binaphthalene-2,2'-dithiol, 3463
ethyl *N*-[[(4-methylphenyl)sulfonyl]oxy]-carbamate in amination reactions using Cs_2CO_3 or CaO promoters, 11235
ethyl *N*-[(4-nitrophenyl)sulfonyl]oxy-carbamate, improved amination by – in the presence of inorganic oxides or carbonates, 3829
(*R*)- or (*S*)-1-phenylethyl *N,N*-diisopropyl-carbamate, deprotonation by *s*-butyl-lithium, synth of α-oxy-α-methylbenzyl-lithium, stereodivergence of its electrophilic substitution, 6097
thioxocarbamate derivs as intermediates in radical-based deoxygenation of aliphatic alcohols using phenyl isothiocyanate, 10193

Carbanions
alkylbis(2,6-dimethyl-4-methoxyphenyl)bor anes, synth and properties of, 13775, 13801
of dithiane monosulfone and dithiane monosulfonium salt, reaction with nitro-arenes by oxidative or vicarious nucleophilic substitution of hydrogen, 4913
enantioenriched α-oxy-α-methylbenzyl-lithium, generation from (*R*)- or (*S*)-1-phenylethyl *N,N*-diisopropylcarbamate, stereodivergence of its electrophilic substitution, 6097
influence of the geometry of the carbanionic moiety on the non-induced diastereoselectivity of [2,3]-Wittig rearrangement of lithiated diallyl ethers, 3687
lithio α-amino carbanions, configurationally stable, synth, 6077, 6089
$S_{RN}1$ reactions of – with 7-iodobicyclo-[4.1.0]heptane; stereoselective C-C bond formation on cyclopropane rings, 9267
α-sulfinyl carbanion of *p*-tolyl 2-(trialkylsilyl)ethyl sulfoxides or t-butyl 2-(trimethylsilyl)ethyl sulfoxide, reaction with aldehydes and subsequent desilylsulfinylation to yield allylic alcohols, 1045
tertiary carbanions, conversion to 2-bromoesters by bromination of alkylation using 1,2-dibromoethane, 9825

Carbapenems
2-[(4-fluorophenylsulfonyl)methyl]-carbapenem carboxylate, synth involving addition-elimination ring closure of an iodovinyl sulfone as the key step, 12085

Carbenes and carbenoids
alkenyl chromium carbene complexes, regioselective benzannulation with 2-(trimethylsilyl)-1-phenylethyne, synth of silyl quinones with subsequent iodination and cross-coupling to phenyl quinones, 2003
alkylidene carbenes as intermediates in synthesis of functionalised branced-chain sugars and nucleosides by reaction of *O*-mesylcyanohydrins of furan-3-ulose with sodium azide, 7269
lithium and zincate carbenoids by bromine/lithium and bromine/zinc exchange reactions of *gem*-dibromo compds, stereochemistry, 7987
α-methoxycarbonyl oxycarbenium ions, role of the 2-oxonia Cope rearrangement in the π-cyclisation of, 7115, 7129
organothio sulfonyl carbenes, *in situ* preparation *via* ylid decomposition or *via* α-eliminations, 3721
β-oxido carbenoid *via* ligand exchange reaction of the sulfinyl group of α-chloro β-hydroxy sulfoxide; rearrangement of – for homologation of carbonyl compds, 11839
rhodium carbenoid mediated O-H insertion reaction of phenols with trialkyl 2-diazophosphonoacetates, synth of trialkyl 2-aryloxyphosphonoacetates, 3177
rhodium carbenoid mediated O-H insertion reactions; O-H insertion *vs.* H-abstraction and effect of catalyst, 3195
rhodium carbenoid route to oxazoles, oxazole-4-nitriles, -phosphonates and -sulfones by rhodium(II) catalysed addition of nitriles to the corresponding diazo compd, 3761
vinyldiazomethanes, rhodium(II) catalysed reactions with oxygenated dienes, synth of tropolones, 9883

Carbohydrates
N-, C- and *S*-mannopyranosyl derivs, design and synth as potential inhibitors of jackbean α-mannosidase, 6965

2-acetamido-1,2,4-trideoxy-1,4-imino-D-galactitol and -D-glucitol, synth from *N*-acetyl-D-glucosamine as glycosidase inhibitors, 13299
aldohexoses, reductive amination with mono- and bifunctional alkyl amines, conversion of carbohydrates into EDTA type complexing agents, 8103
2-alkoxy-2-fluoro-glycosyl fluorides, reaction with benzyl alcohol derivs, synth of isochromane or *O*-glycoside derivs, 9125
alkyl hex-2-enopyranosides, radical cyclisation of –, synth of fused furanopyranes, 5369
alkynyl sugars, epimerisation of – through cobalt complexes, synth of pyran subunits of marine *trans*-fused polyether toxins, 5633
alkynyl sugars, ring opening by Nicholas reaction; application to enantioselective synth of oxepane subunits of marine trans-fused polyether toxins, 12883
2'-*C*-alkynyl-2'-deoxy-1-β-D-arabinofuran osylpyrimidines *via* radical deoxygenation of t-propargyl alcohols in the sugar moiety, 10397
aminoarabinose and aminoaltrose derivs, synth by catalytic double osmylation of 1,2-dihydropyridines, potential glycosidase inhibitors, 1135
ardisicrenosides E and F, triterpenoid pentasaccharides from roots of *Ardisia crenata*, NMR and molecular mechanics to determine structure, 11853
baker's yeast mediated synth of (*R*) *S*-benzyl thioglycerate from D-mannose, D-glucose and D-fructose, 857
boron analogues of carbohydrates, chemistry of, 12521
6-bromo-6-deoxy-1,4-aldonolactones and 6-bromo-6-deoxy-alditols with D-*galacto*-, D-*altro*-, D-*manno*- and D-*ido*-configuration, conversion into tetrahydrofurans, 13285
2-deoxy and 2,6-dideoxy carbohydrates by indium-mediated allylation of aldehydes, 749
6-deoxy-D-fructose and 6-deoxy-L-sorbose, chemoenzymatic synth from racemic 2,3-dihydroxybutyraldehyde using transketolase from spinach leaves, 8677
di- and trisaccharides, synth by utilising the transgalactosylation potential of β-galactosidase from *Aspergillus oryzae*, 10407
1,4-dideoxy-1,4-imino-hexitols, synth from aldonolactones and evaluation as glycosidase inhibitors, 7513
dihydroxyacetone ketose, dimers of–; solution and crystal structure of stereoisomers of 2,5-diethoxy-1,4-dioxane-2,5-dimethanol, 10055
Ferrier reaction, mechanistic and stereochemical studies of – by using (*E*)-selectively deuterated methyl[6-^{2}H]-2,3,4-tri-*O*-benzyl-α-D-*xylo*-hex-5-enopyranoside, 4125
functionalised branced-chain sugars and nucleosides by reaction of *O*-mesylcyanohydrins of furan-3-ulose with sodium azide *via* alkylidene carbenes, 7269
cis-1,2-fused glycopyrano heterocycles by condensation of 2-amino-2-deoxysugars with isothiocyanates, 3273
glucal halohydrins, synth and cyclisation to glucal epoxides, effect of the halide on epoxide formation, 6783
β-D-glucopyranosides of 20-hydroxyecdysone, synth involving the combination of hydroxyl and 1,2-diol protective groups in the aglycone moiety, 9679
N-glycopeptides that contain extended sugar chains, synth and conformational analysis, 2373
3-*C*-phosphonosugars from 2-deoxy-D-ribose and α-D-xylofuranose, subsequent condensation to give 3'-*C*-phosphononucleosides, 8427
phosphoric acid diesters of 7β-hydroxycholesterol and carbohydrates, synth by phosphoramidite method, 6569
O-protected deaminotunicaminyluracil, synth, 2965
pseudo-α- and β-D-glucopyranose and validamine, synth from D-glucuronolactone, 9619
pseudo-α-D-arabinofuranose and two *pseudo*-D-arabinofuranosylnucleosides, (+)-cyclaradine and (+)-1-*pseudo*-β-D-arabinofuranosyluracil, synth from D-arabinose, 9961
pseudosugars of the allo-, gulo, manno- and talo-series, synth from (1*R*,2*S*,3*R*,4*S*)-4-butyryloxy-2,3-isopropylidenedioxy-5-

cyclohexen-1-ol, 7061
pyrano- and furano- sugar lactams from the corresponding sugar lactones, 4215
pyruvate acetals of carbohydrates by coupling of trialkylsilylated diols and pyruvates, 12143
reaction of sugar thiocyanates with Grignard reagents, synth of thioglycosides, 2975
spiro anomeric oxathiazole sugar derivs by treatment of 2,3,4,6-tetra-*O*-acetyl-1-*S*-(*Z*)-benzhydroximoyl-1-thio-D-glucopyranose with *N*-bromosuccinimide, 6559
structural analogues of antibiotic moenomycin A with a D-glucose-derived unit F as inhibitors of transglycosylase, 2029
3-substituted (azido, acylthio, chloro or fluoro)-2,3-dideoxy-D-*erythro*-pentoses and 3-methyl-3-substituted-2,3-dideoxy-D-*erythro*-pentoses, synth, 8603
2-substituted succinates, malic, citramalic acid and other hydroxysuccinic acid derivs by reductions of fumarate and by hydrations of 2-butene-1,4-dioic acids using *Clostridium formicoaceticum* 13631, 13641
sugar aldoximes, tandem nitrone generation/cycloaddition reactions with divinyl sulfones, synth of heterocyclic systems *via* nitrone intermediates, 5495
sugar derived azomethines, cyclocondensation of – with Danishefsky's diene, synth of swainsonine-analogues hydroxyindolizidines, 13671
T and TN haptens, conformational analysis of the carbohydrate portion by NMR spectroscopy and molecular modelling, 77
5-*N*- and 9-*N*-thioacylated sialic acids, synth by *N*-thioacylation of neuraminic acid methyl α-glycoside, 7445
see also Cyclodextrins, Glycals, Glycolipids, Glycosides

Carbonates
2,3-alkadienyl carbonates, cross-coupling with organoboron, synth of 2-substituted 1,3-butadiene, 7961
allylic carbonates, palladium(0)-catalysed alkylation of – by aromatic thiols, synth of allylic aryl sulfides, 10321
C-17 and C-20 allylic carbonate, hydrogenolysis of -; method for stereospecific generation of natural C-17 stereochemistry and C-20 epimer in steroid side-chains, 475

Carbonyl compds
aldolisation reactions of silyl ketene acetals with lactone carbonyls mediated by fluoride, 3333
1-alkoxycarbonylalkylidenetriphenylarsoranes, prep and reactions of, 13765
alkyne dicobalthexacarbonyl complexes from cobalt bromide, synth and use in Pauson-Khand cyclopentenone synth, 6955
amide-based protecting/radical translocating (PRT) groups, generation of radicals adjacent to carbonyls by 1,5-hydrogen transfer reactions of *o*-iodoanilides, 7343
aqueous solution of glyoxylic acid, pyruvaldehyde and glyoxal, Diels-Alder reactions with cyclic or non-cyclic dienes, synth of cycloadducts and/or α-hydroxy γ-lactones, 10265
by Lewis acid-promoted selective rearrangement of trisubstituted epoxides, 3663
carbonyl ylids formed from transition metal-catalysed decomposition of diazo-(trialkylsilyl)-acetates, 7435
carbonyl-ene cyclisation/cycloalkylation of trifluoromethyl ketones, route to trifluoromethyl diterpenoids, 11921
deprotective method for allyloxycarbonyl in aqueous media, 497
1,3-dicarbonyl compds, cobalt(II) chloride catalysed allylation of, 9145
β-dicarbonyl compds, photo-induced arylation of – by arylazosulfides, use in synth of methyl labelled 2-arylpropionic acids, 8117
5,5-disubstituted 2(3*H*)-dihydrofuranones containing side-chain carbonyl functions, synth, 8143
ethoxycarbonyl-nitrile benzylimine $EtOOCC{\equiv}N^{+}\text{-}N^{-}CH_2C_6H_5$, cycloadditions of – and synth of β-amino acids; reactions of ethyl 2-chloro-2-ethoxyacetate and 2-chloro-2-ethoxyacetyl chloride, 7543
from 1-substituted 1-ethoxydienes, 12463
hydrogenation of – in the presence of lanthanide *tris*-β-diketonates as pro-

tecting reagents, 6921
α-methoxycarbonyl oxycarbenium ions, role of the 2-oxonia Cope rearrangement in the π-cyclisation of, 7115, 7129
β-perfluoroalkyl-β-dicarbonyls, reaction with hydrazonyl halides and halooximes, synth of 5-perfluoroalkylpyrazoles, 5-perfluoroalkylisoxazoles and 4-perfluoroacylisoxazoles, 8827
α-thiocyanato-β-dicarbonyl compds, dimerisation to 4,5-disubstituted-2-amino- and 2-acetamido-thiazoles, cyclisation to thiazole and oxathiole heterocycles, 7253
α-thiosubstituted carbonyl compds from α,β-epoxysulfoxides, deoxygenation *versus* dehydration and an overall 1,2-keto transposition, 5413
αβ-unsaturated -, copper-catalysed conjugate additions of organozirconocenes to, 1935
see also Aldehydes, Ketones, and other relevant compound classes. For metal carbonyls *see* Iron, cobalt, and compds

Carbonylation
palladium(0)-catalysed cyclisation – of 2,7-octadienyl acetate and homologues, synth of bicyclo-[3.3.0] and [4.3.0] skeletons, 5705
palladium catalysed cyclisation- – of allylic 2-alkynoates, synth of α-alkylidene-γ-butyrolactone β-acetic acid derivs, 9067
palladium-catalysed - of allylamines, synth of βγ-unsaturated amides, 453

Carboxylic acids and derivs
2-phenyl-4-oxo-1-amino-cyclohexanecarboxylic acids, synth from Diels-Alder cycloadditions of (*Z*)-2-phenyl-4-benzyliden-5(4*H*)-oxazolone and of methyl (*E*)-2-cyanocinnamate, 12989
acetyloleanolic, acetylursolic and dehydroabietic acids, oxidative decarboxylation by hydrogen peroxide and a mercury(II) salt, synth of *nor*-derivs, 2591
α-alkylidene-γ-butyrolactone β-acetic acid derivs by palladium catalysed cyclisation-carbonylation of allylic 2-alkynoates, 9067
4-amino substituted and 4-unsubstituted 1,10-phenanthroline-3-carboxylic acid derivs, synth as potential DNA cleaving reagents, 889
1-amino-2-phenyl(alkyl)cyclopropanecarboxylic acids, asymmetric synth by diastereoselective cyclopropanation of highly functionalised monochiral olefins, 12443
(±)-2-*endo*-amino-6-*exo*-(methylthio)-[2.2.1]heptane-2-*exo*-carboxylic acid, synth from 5-norbornen-2-ol, 12973
α-arylpropionic acids from rearrangement of α-chloro-propiophenones, studies on chirality transfer and synth of (*S*)-(+)-ibuprofen and (*S*)-(+)-ketoprofen, 1243
(2*S*)-aziridine-2-carboxylic acid, synth and incorporation into peptides, 1717
benzoic acids, conversion into their *ortho*-pyridoyl derivs *via* metalation, 2907
3-borylpropenoic acid derivs, Diels-Alder cycloadditions of – and their use as synthetic equivalents of *E*-β-hydroxy acrylic acid and *E*-β-hydroxy vinylamine, 3397
carboxylic acid halides, reaction with alcohols; alkyl halide vs. ester formation, 217
α-chlorocinnamates, synth by reaction of glycidic esters with *in situ* prepared chloromethyleneiminium salts, 2433
chromomoric acid C-I and C-II methyl esters, total synth and structural revision, 12337
derivs of 4-amino-2-benzazepin-3-one-1-carboxylic acid, conformationally restricted bridged peptide analogues of Phe-Gly, synth by amidoalkylation of Phe-α-methoxyglycine, 10771
2(*S*)-[1,1-dimethylethylsulfonylmethyl)-3-(1-naphthyl)-propionic acid, synth from 3-bromo-pyruvic acid, building block for protease inhibitors, 4691
esters of aromatic and heteroaromatic carboxylic acids, *Mucor miehei* lipase catalysed transesterifications on–, 6999
ethyl β-carboline-3-carboxylate (β-CCE) and methyl 4-methyl-β-carboline-3-carboxylate (4-methyl-β-CCM), synth from indole-2-carboxaldehyde, 6299
functionalised (*E*)-αβ-unsaturated carboxylic acids by β-acylvinyl intermolecular radical additions to double bonds, 6715
glycidic acids opening reaction by ammonia and amines, 9325

α-halocarboxylic acid derivs and α-halo-aldehydes from α-halo-α-sulfinyl carboxylic acid, esters and aldehydes *via* magnesium enolates, 4957
[16,16,16-$^2H_3$] 11-hexadecynoic acid and [15,15,16,16,16-$^2H_5$] (*Z,Z*)-11,13-hexadecadienoic acid, synth and use in biosynth of sex pheromone of processionary moth, 9789
cis-(+)-2-hydroxy-2-phenylcyclohexanecarboxylic acid (cicloxilic acid), absolute stereochemistry at C1 and C2, 205
3-hydroxy-6-alkenoic acids, bicyclisation to prepare bicyclo[3.2.0]hept-3-en-6-ones and subsequent synth of grandisol and lineatin, 3235
5-hydroxytiagabine, a human metabolite of the GABA uptake inhibitor tiagabine, synth from 2-bromo-3-methylthiophene, 8699
itaconic acid derivs, selective enzymatic transformations of - by *Pseudomonas fluorescens* lipase, access to potentially useful building blocks, 3251
methyl indole-3-carboxylates and methyl benzo[*b*]-furan-3-carboxylates by cyclisation of 2-alkynylanilines and 2-alkynylphenols respectively, 11803
3-(methylthio)-propenoic acid, amides of–, sinharines, penimides and illukumbins, 6279
Michael-Dieckmann addition of lithium dienediolates of carboxylic acids to the lithium salts of carboxylic acids, synth of cyclohexenones and polycyclic ketones, 2571
oxacyclic carboxylic esters from π-cyclisations of α-methoxycarbonyl oxycarbenium ions, 7115, 7129
1-oxo-hydrindene-2-acetic and -propionic acids, synth as precursors of strigol and its analogues, 2895
quinolonecarboxylic acid, DU-6859, synth of (1*R*,2*S*)-2-fluorocyclopropylamine component, 3889, 3905
reaction with chlorosulfonylisocyanate, synth of *N*-chlorosulfonylamides and subsequent conversion to nitriles, 6549
2-substituted succinates, malic, citramalic acid and other hydroxysuccinic acid derivs by reductions of fumarate and by hydrations of 2-butene-1,4-dioic acids using *Clostridium formicoaceticum* 13631, 13641
substituted *trans*-cinnamic acids, kinetics and mechanism of oxidation by pyridinium chlorochromate and by chloramine-T, a non-linear Hammett plot, 10933, 10945
β,β,β-trialkoxyethyllithium, a carboxyl protected acetic acid dianion equivalent, stable towards fragmentation, synth and reactivity, 8099
(*Z*)-18-[4-[3(trifluoromethyl)diazirinyl]phenyl]-9-octadecenoic acid, photoactivatable, synth for protein kinase labelling, 3785
unsaturated carboxylic acids, ^{13}C NMR studies of dianions of, 5109
see also Amides, Esters, and other relevant compound classes

Carcinogens
phorbol, tumour promoter, synth of the tetracyclic core of phorbol by condensation of an optically pure carenyl anion with 2-chlorocyclohexanone, 4071

Carotenoids
carotenoid aldehydes by Heck vinylation of tertiary allylic alcohols and a hydrolysis/dehydration reaction, 3389

Catalysis
asymmetric 1,2-addition of organolithiums to aldimines catalysed by chiral amino ether, 4429
asymmetric base-catalysed cycloaddition between anthrone and some dienophiles, 4543
asymmetric dihydroxylation of (2*S*,3*R*) 5-phenylpent-4-en-2,3-diol derivs, 5021
asymmetric hetero Diels-Alder reaction catalysed by stable and easily prepared (acyloxy)borane (CAB) complex, 4555
asymmetric hydrogen-transfer reduction of ketones with isopropanol catalysed by ruthenium complexes with chiral Schiff base ligands of (1*R*,2*R*)-diaminocyclohexane and aromatic aldehydes, 4347
asymmetric Michael reaction of α-cyano carboxylates catalysed by a rhodium complex with *trans*-chelating chiral diphosphine RhTRAP, 4439
asymmetric oxidation of sulfides using (salen)manganese(III) complexes as catalysts, 9609

asymmetric reductive amination of ketones *via* highly enantioselective DuPHOS-Rh-catalysed hydrogenation of the C=N double bond, 4399
asymmetric Rh(I) catalysed [4+2] cycloisomerisation reaction; electronic and torsional ligand control of absolute stereoselection, 6145
asymmetric synthesis of methylenecyclobutanes and their transformation to medium-sized carbocyclic compds, 4529
asymmetric synthesis using optically active 2'-diphenylphosphino-1,1'-binaphthyls (MOP's) having various functional groups, synth, 4293
BINAP-Ru(II) complexes in hydrogenation; organometallic ways for multiplication of chirality, a summary of the work of R. Noyori, 4259
biocatalysis in organic solvents, 8253
catalytic allylic alkylation with palladium complexes of 1-(2-diphenylphosphino-1-naphthyl)isoquinoline, 4493
catalytic intramolecular hydrosilation and hydroacylation using catalysts of the type [Rh(chiral diphosphine)]$^+$, 4335
chemoselective methyltrioxorhenium(VII)-catalysed sulfoxidations with hydrogen peroxide, 13121
enantio- and diastereoselective titanium-TADDOLate catalysed addition of diethyl and bis(3-buten-1-yl)zinc to aldehydes, 4363
enantioselective catalytic epoxidation of cinnamate esters, 4323
enantioselective conjugate addition of diethylzinc to chalcones catalysed by chiral Ni(II) aminoalcohol complexes, 4479
enantioselective copper-catalysed 1,4-additions of Grignard reagents to enones using mercaptoaryl-oxazolines as ligands, 4467
enantioselective epoxidation of *cis*-olefins using (salen)manganese(III) complex bearing a *p*-(t-butyl)phenyl or a binaphthyl group as catalyst, 4311
enantioselective intramolecular cyclopropanation of *N*-allylic- and *N*-homoallylic diazoacetamides catalysed by chiral dirhodium(II) catalysts, 4519
enantioselective synth of α-amino acids by phase transfer catalysis using Schiff base substrates, 4507
epoxidation of *cis*-olefins using a (salen)-manganese(III) complex as catalyst, 11827
glutathione peroxidase-like - of α-(phenylselenyl)ketones and diphenyl diselenide, evidence for a common selenolate intermediate, 2929
heterogeneous catalytic asymmetric dihydroxylation of olefins; a new polymeric support and a process improvement, 11321
hydrogenation of (α)-*N*-acetamidocinnamic acid using optically active expanded chelate phosphines derived from 1,ω-bis(dichlorophosphino)alkanes as catalysts, 4303
hydrogenation in the presence of lanthanide *tris*-β-diketonates as protecting reagents, 6921
β-hydroxysulfoximine-catalysed enantioselective alkylation of aldehydes, 4355
personal review of K. Barry Sharpless, 4235
sulfur and phosphorus containing oxazolines as ligands for asymmetric catalysis, 799
synth of a spheroidal bis-porphyrin, dual capped quadruply cofacial dimeric tetraphenylporphyrin, as a ligand designed to accept two catalytic metal ions in an isolated environment, 11339

Catalysts
(acyloxy)borane (CAB) complex as – for asymmetric hetero Diels-Alder reaction, 4555
(acyloxy)borane (CAB) prepared *in situ* from tartaric acid and arylboronic acids as catalyst for asymmetric hetero Diels-Alder reactions, 979
cerium(IV) as catalyst for alcoholyses of allylic and tertiary benzylic alcohols, 1859
cerium(IV) as ceric ammonium nitrate as catalyst for catalytic and efficient cleavage of allylic and tertiary benzylic ethers and esters, 7299
chiral β-aminoalcohols as – for asymmetric base-catalysed cycloaddition between anthrone and some dienophiles, 4543
chiral lithium alkoxides as catalysts for addition of alkyllithium reagents to

aldehydes, 6109
chiral Ni(II) aminoalcohol complexes as – in enantioselective conjugate addition of diethylzinc to chalcones, 4479
complex prepared *in situ* from titanium tetraisopropoxide [Ti(*O*-*i*-Pr)$_4$] and chiral Schiff bases as catalyst for enantioselective addition of trimethylsilyl cyanide to aldehydes, 4385
conformational comparison of cyclo-[(*S*)-His-(*S*)-Leu] and cyclo-[(*S*)-His-(*S*)-Phe] as catalysts for asymmetric addition of cyanohydrins to aldehydes, 7933
copper(I) thiolate complexes derived from mercaptoaryl-oxazoline ligands as – in enantioselective 1,4-additions of Grignard reagents to enones, 4467
Cu-HZSM-5 zeolite as catalyst for reaction between halobenzenes in synth of phenols, 12913
1,4-diazabicyclo-[2,2,2]-octane (DABCO) as catalyst for rearrangement of allylic esters, 12001
N,O-dibenzylcinchonidinium bromide as catalyst for enantioselective synth of α-amino acids by phase transfer catalysis, 4507
bis(dibenzylideneacetone)palladium(0) and triphenyl phosphine as catalyst for regioselective allylation of fulvenes, 61
dimeric manganese(III)-tetraarylporphyrins as – for H_2O_2-promoted olefin epoxidation, 9025
(*S*-1,2-bis(diphenylphosphino)butane-4-ol, acyclic analogue of hydroxy norphos, catalyst for hydrogenation, 10419
dirhodium(II) complexes with four chiral pyrrolidinone or oxazolidinone ligands as catalysts for cyclopropanation of *N*-allylic- and *N*-homoallylic diazoacetamides, 1665
DuPHOS-Rh as catalyst for hydrogenation of the double bond of *N*-acylhydrazones, 4399
effect of - in rhodium carbenoid mediated O-H insertion reactions; O-H insertion *vs.* H-abstraction, 3195
lanthanide(III) trifluoromethanesulfonates as catalysts in asymmetric Diels-Alder reactions, 11623
lanthanum-lithium-(*R*)-BINOL as catalyst for nitoaldol reaction in synth of (*S*)-(–)-pindolol and [3'-^{13}C]-(*R*)-(–)-pindolol, 12313
methyltrioxorhenium(VII) as catalyst for sulfoxidations with hydrogen peroxide, 13121
NaHX zeolite, comparison of catalytic properties with Nafion-H, transformation of 1,2-diols over perfluorinated resin-sulfonic acids, 8195
optically active 2'-diphenylphosphino-1,1'-binaphthyls (MOP's) having various functional groups, synth and use in asymmetric synthesis, 4293
optically active expanded chelate phosphines derived from 1,ω-bis(dichlorophosphino)alkanes, synth and use in asymmetric synthesis, 4303
palladium(0)-water soluble catalyst from palladium acetate and sulfonated triphenylphosphine as catalyst for allylic substitution with carbon and heteronucleophiles in an aqueous-organic medium, 505
palladium complexes of 1-(2-diphenylphosphino-1-naphthyl)isoquinoline as – for the reaction between (*E*)-1,3-diphenyl-2-propenyl acetate and diethyl malonate, 4493
palladium-phosphine complexes as catalysts for carbonylation of allylamines, synth of βγ-unsaturated amides, 453
palladium-phosphine complexes as catalysts for decarboxylation reactions of allyl β-keto carboxylates, synth of α-fluoroketones, 487
pig liver acetone powder as biocatalyst for enantioselective synth of *trans*-2-alkoxycyclohexan-1-ols, 10521
Rh_2(5*S*-MEPY)$_4$ and Rh_2(4*S*-MEOX)$_4$ as catalysts for cyclopropanation of *N*-allylic and *N*-homoallylic diazoacetamides, 4519
[Rh(chiral diphosphine)]$^+$ type catalysts for the asymmetric catalytic intramolecular hydrosilation and hydroacylation, 4335
rhodium complex with *trans*-chelating chiral diphosphine RhTRAP as – for Michael reaction of α-cyano carboxylates with vinyl ketones or acrolein, 4439
[Ru(η^6-C_6H_6)Cl_2]$_2$ and chiral Schiff bases as catalyst for hydrogen-transfer reduct-

ion of ketones with 2-propanol, 4347
(salen)manganese(III) complex as – for asymmetric epoxidation of conjugated *cis*-olefins, 11827
(salen)manganese(III) complex bearing *p*-(t-butyl)phenyl or binaphthyl groups, synth as catalysts for the epoxidation of *cis*-olefins, 4311
(salen)manganese(III) complexes as catalysts for the catalytic asymmetric oxidation of sulfides, 9609
α,α,α',α'-tetraaryl-2-mono- and -2,2-di-substituted-1,3-dioxolan-4,5-dimethanolates (TADDOLates) of titanium(IV) as catalysts for addition of diethyl and bis(3-buten-1-yl)zinc to aldehydes, 4363
water-soluble sodium triphenylphosphine *m*-sulfonate/$Pd(OAc)_2$ system as catalyst for deprotection of allyloxycarbonyl moiety in aqueous media, 497
zerovalent Pd(Ar-BIAN)(dimethyl fumarate) and divalent $PdCl_2$(Ar-BIAN) complexes containing the rigid bidentate nitrogen ligand bis(arylimino)acenaphthene as catalysts for carbon-carbon bond formation, 323
see also Enzymes and enzyme reactions

Cephalosporins
7-methoxycephems (analogues of 7-methoxycephalosporins), synth from α-methoxy-α-(6*H*-1,3-thiazin-2-yl)glycinates, 12609

Cephams, cephems
N-chloro β-lactams, prep and reactions of, 11091
7-methoxycephems (analogues of 7-methoxycephalosporins), synth from α-methoxy-α-(6*H*-1,3-thiazin-2-yl)glycinates, 12609

Cerium and compds
cerium(IV) as catalyst for alcoholyses of allylic and tertiary benzylic alcohols, 1859
cerium(IV) as ceric ammonium nitrate as catalyst for catalytic and efficient cleavage of allylic and tertiary benzylic ethers and esters, 7299

Cesium and compds
(9-alkyl-9-fluorenyl)-methylcesium (or lithium) and 2,2-diphenyl-3,3-dimethylbutyllithium, rearrangements of, 5971
Cs_2CO_3 or CaO as promoters of ethyl *N*-[[(4-methylphenyl)sulfonyl]oxy]carbamate in amination reactions, 11219

Chalcones
asymmetric bromination of – and benzylideneacetone in β-cyclodextrin complex, 7903
chalcone and lignan glucosides from the roots of *Pyracantha coccinea*, structures, 5181
enantioselective conjugate addition of diethylzinc to – catalysed by chiral Ni(II) aminoalcohol complexes, 4479
2-(3,4,5-trimethoxyphenyl)-4-(3,4-methylenedioxyphenyl)-4-oxo-2-butenonitrile (β-cyanochalcone) and its related compds, photochemistry of, 9287

Chelation
cyclam tetrahydroxamate (CYTROX) and cyclam tetraacetonylacetone (CYTAC) actinide specific chelators, design and synth, 2657

Chemotherapy
agelasphins, antitumour and immunostimulatory cerebrosides from the marine sponge *Agelas mauritianus*, structures and synth of AGL-9a, 2771
(+)-altholactone and its three isomers, synth from D-gulonolactone and D-mannose, activity against P388 leukemia, 8685
3'-amino-2',3'-dideoxy-2'-methylidene pyrimidine nucleosides, synth as antitumour agents, 689
antimelanoma agent 4-*S*-cysteaminylphenol and related catechol thioethers, biomimetic oxidation of–, isolation and reactivity of novel dihydrobenzothiazinequinones, 8757
antitumour activity of chloro ellipticines and 5,6,11-trimethyl-5*H*-benzo[*b*]carbazole, 4811
antitumour cyclic pentapeptide, astin B, from *Aster tataricus*, conformational analysis, 11613
(±)-aphidicolin with antitumour and antileukemic activity from fungus *Cephalosporium aphidicola* Petch, formal synth by successive intramolecular Diels-Alder reactions, 10183
(±)-aphidicolin, antiviral and antitumour tetracyclic diterpene from *Cephalosporium aphidicola*, synth, 11153

calicheamicin, antitumour antibiotic, features of DNA recognition for oriented binding and cleavage by calicheamicin, 1361
calicheamicin, enediyne containing antitumour antibiotic, circular dichroism studies of calicheamicin-DNA interaction, 1341
calicheamicin, enediyne containing antitumour antibiotic, NMR characterization of - bound to DNA, 1351
calicheamicin $\gamma 1^I$ and esperamicin-A_1, synth of bicyclic core structure using [2,3]-Wittig rearrangement, 1469
coformycin, ribonucleoside with use in cancer and viral chemotherapy, total synth of (±)-carbocyclic coformycin, 6695
cyclopropamitosenes (7-methoxy-1,2-cyclopropapyrrolo[1,2-*a*]indoles), bioreductive anticancer agents, synth of – and related indolequinone, 7657
[L-3-deoxymimosine^4]-angiotensin I, a protein-tyrosine kinase (PTK) inhibitor and therefore a potential anticancer agent, synth from t-Boc-L-asparagine, 9873
docetaxel, partial synth of major human metabolites of docetaxel, 10289
dolastatin 15 from *Dolabella auricularia*, synth and anticancer activity, 12097
dl-duocarmycin, its 2-epimer, (+)-duocarmycin A and its three isomers, antitumour antibiotics from *Streptomyces* sp., synth and cytotoxic activity against P388 murine leukemia, 2793, 2809
dynemicin A, antitumour antibiotic with a 10-membered cyclic enediyne moiety, synth of a cyclic enediyne model compd of, 1449
dynemicin A, cyclic enediyne antibiotic from *Micromonospora chersina*, synthetic studies involving quinoline derivs as intermediates, 5621
ellipticine derivs by modification of the cyano group of 1-cyano-6-methylellipticine, antitumour activity, 2551
(*E*) and (*Z*)-enediynes, antitumour antibiotics, synth by palladium-catalysed reaction of (*E*) and (*Z*)-dichloroethenes with 1-alkynes, 5335
esperamicin, calicheamicin, diynemicin and neocarzinostatin, enediyne antitumour agents, use of $\eta^2Co_2(CO)_6$ acetylene complexes as intermediates in synth of-, 1397
esperamicin and calicheamicin, synth of the bicyclo[7.3.1]enediyne core by a non cobalt mediated route, 1519
esperamicinone, aglycone of esperamicin A_1 enediyne antitumour antibiotic, synth based on asymmetric epoxidation of a quinone monoketal, 11391
flavanoid- and phenylpropanoid glycosides, antitumour agents from leaves of *Lantana camara*, structures, 9439
manganese *meso*-tetra(4-sulfonatophenyl)-porphine as a tumour-selective magnetic resonance imaging contrast agent, 8657
melodienone and 7-hydroxy-6-hydromelodienone, antitumour heptenes from *Melodorum fruticosum*, synth, 10491
neocarzinostatin, enediyne antitumour antibiotic, synth and chem of a functional analogue of - chromophore, 1419
neocarzinostatin (NCS), antitumour antibiotic, apoprotein-assisted cyclisation of neocarzinostatin chromophore, 1311
neocarzinostatin (NCS), antitumour antibiotic, synth and binding of simple neocarzinostatin chromophore analogues to the apoprotein, 1327
oxabicyclo[7.2.1]enediyne containing an *ortho*-methoxybenzyl group at the anomeric position, synth from methyl-2,3-anhydro-α-D-lyxofuranoside, 1435
phosphoric acid diesters of 7β-hydroxycholesterol and carbohydrates, synth by phosphoramidite method, 6569
polyamine analogues, synth of (*R,R*),(*S,S*) and meso-isomers of a tetraamine and conversion to a fluorinated polyamine analogue using the Mitsunobu reaction, 5579
pregnane glycosides from *Leptadenia reticula* Wight and Arn, antitumour activity, 789
(−)-quinocarcin, antitumour antibiotic, synth of ABE and ABC ring systems, D-ring fragments and total synth and antitumour activity, 6193, 6209, 6221, 6239, 6259
reidispongiolide A and B, potent cytotoxic macrolides from New Caledonian sponge

Reidispongia coerulea, cytotoxicity, 4829
shikonin from *Lithospermum erythrorhizon*, naphthoquinone pigment with anti-tumour, antibacterial and antiinflammatory props, biotransformation by human intestinal bacteria, 3081
taxane related bridged eight membered rings by carbon-carbon bond cleavage *via* carbon centred radical strained tricyclo[5.2.1.$0^{2,6}$]decenes, 921
taxoids, synth of intermediates toward the synth of taxoids by [2+2] photocycloaddition between enones and 2,3-dihydropyran, 9649
taxol derivs, study of retrosynthetic approach to the total synth of – by cleavage reactions of 10-deacetylbaccatin III, 6881
taxol side chain and norstatine by asymmetric reaction of chiral imines with α-silyloxy ketene acetals to prepare α-hydroxy-β-amino ester, 2785
taxol, studies on the photochemistry of, 8633
taxuspines A-C, taxoids from Japanese yew *Taxus cuspidata*, inhibiting drug transport activity of P-glycoprotein in multidrug-resistant cells, 7401
(±)-tylophorine, phenanthroindolizidine alkaloid from *Tylophora asthmatica*, synth by intramolecular cycloaddition of an azide with an ω-chloroalkene, 12293
variolin B, antitumour and antiviral compd from Antarctic sponge *Kirkpatrickia varialosa*, structure, 3987

Chlorins and derivs
pyropheophytin-anthraquinone linked molecules, synth as models for the study of photoinduced electron transfer, 4723

Chromanes
(*E*)-3-arylidene-1-thiochroman-4-ones, dimethyldioxirane oxidation of, 13113
3,3-dichloro- and 3-chloro-chroman-4-ones and thiochroman-4-ones, synth from α-chloro-α-chlorosulfenyl ketones, 5245
thiochroman-4-ones, reaction with isoamyl nitrite, synth of thiochroman-3,4-diones, reactivity of, 7865
thiochroman-4-ones, reaction with thionyl chloride, synth of α-chlorosulfenyl chlorides and subsequent reaction with amines to give sulfenamides and benzo[*b*]thiophen-3-ones on contraction, 827

Chromatography
GC-FTIR for *cis*- and *trans*-configurations of α,α'-disubstituted piperidines and pyrrolidines, 11329
HPLC, bis(2,3-dimethylbutenyl)sulfanes by sulfane addition to 2,3-dimethyl-1,3-butadiene and of the reaction of sulfur with 2,3-dimethyl-2-butene, 11187
HPLC separation of a diastereomeric diethylphosphonopeptide mixture, 1919

Chromenes
4-(2-alkenylamino)-3-formyl-2(2*H*)-chromenes, thermal ene reaction to give 5-hydroxychromen[3,4-*b*]azepines, 1063
4-bromo- 2*H*-chromenes and 2*H*-thiochromenes, synth from corresponding ketones and reactivity of, 2507

Chromium and compds
polypyridyl chromium(III) complexes, photoredox reactions with arylthioacetic acids in acetonitrile and aqueous media, 9447
pyridinium chlorochromate as oxidising agents for some substituted *trans*-cinnamic acids, kinetics and mechanism, a non-linear Hammett plot, 10933

Chromones
2-alkyl-3-iminomethylchromones, cycloaddition with *N*-phenylmaleimide, synth of 2-azaxanthones, 4905
cyclotetrachromotropylene, complexation of amino acids with – in aqueous solution, importance of CH-π and π-π interactions, 3453
4-oxo-4*H*-1-benzopyrans with substituents at C-3, cycloaddition to 1-alkoxy- or 1,1-dialkoxyalkenes, synth of 3-alkoxy- or 3,3-dialkoxy-4,4a-dihydropyrano[4,3-*b*][1]benzopyran-10-ones, 11755

Chromotography
HPLC, neocarzinostatin (NCS), apoprotein-assisted cyclisation of, 1311

Circular dichroism
absolute configuration of dinaphth-[2,1-*c*:1',2'-*e*]oxepin-3-(5*H*)-one, 2831
absolute stereochemistry of picrodendrins U-W, norditerpene lactones from the bark of *Picrodendron baccatum*, 10859
bilirubin analogues with *N,N*-methylene bridges, synth and properties, 9919
biotransformation of shikonin by human

intestinal bacteria, 3081
circular dichroism studies of calicheamicin-DNA interaction; evidence for calicheamicin-induced DNA conformational change, 1341
3,3-diphenyl-2-methylalanine, 9837
N-glycopeptides that contain extended sugar chains, 2373
of michellamines, dimeric naphthylisoquinoline alkaloids, assignment of axial chirality by calculated and experimental CD spectra, 7807
phosphonomethyl-phenylalanine and phosphotyrosine containing cyclic peptides, 2691
spectra for cage-type cyclophanes having a helically twisted and cylindrical internal cavity, specific molecular recognition by–, 13601
spectra of crown ether peptides, 989
spectra of a deriv of *cis*-(+)-2-hydroxy-2-phenylcyclohexanecarboxylic acid (cicloxilic acid), absolute stereochemistry at C1 and C2, 205
spectra of *endo*-2-*R*-(+)-norbornenecarboxylic acid and *endo*-2*R*-(−)-1,4,5,6,7,7-hexachloronorbornenecarboxylic acid, 2099
spectra of favelol, isofavelol and favelone, benzocycloheptenone derivs from the bark of *Cnidoscolus phyllacanthus*, 5659
spectra of tetra and hepta peptides containing α,β-dehydrophenylalanine residues in alternate positions, 907
spectrum of moenomycin A, 5299

Clays and earths
Cu-HZSM-5 zeolite as catalyst for reaction between halobenzenes in synth of phenols, 12913
NaHX zeolite, comparison of catalytic properties with Nafion-H, transformation of 1,2-diols over perfluorinated resin-sulfonic acids, 8195

Cleavage reactions
carbon-carbon bond cleavage *via* carbon centred radical in strained tricyclo-[5.2.1.$0^{2,6}$]decenes, synth of taxane related bridged eight membered rings, 921
catalytic and efficient – of allylic and tertiary benzylic ethers and esters with cerium(IV), 7299
conformational change promoted by 3'-ethylphosphate at the branch-point of a tetrameric lariat-RNA, self cleavage reaction model, 8711
cyclobutyl bond cleavage by adjacent ketyl radical generated under PET conditions, 3835, 3843
of 10-deacetylbaccatin III, retrosynthetic approach to the total synth of taxol derivs, 6881
features of DNA recognition for oriented binding and cleavage by calicheamicin, 1361
1,5-hydrogen atom transfer in monocyclic analogue of neocarzinostatin chromophore relevant to mechanism and cleavage selectivity of diyl based DNA cleaving agents, 1419
reductive cleavage of allylic ketals by an arene-catalysed lithiation, synth of masked lithium homoenolates, 3437
regioselective carbon-carbon σ-bond scission followed by 1,6-proton shift upon the reductive metalation of benzylidenecyclopropane derivs with lithium metal, 2439
self cleavage of C8-histamino-r(UpA) promoted by $ZnCl_2$; mechanistic studies on a designed ribonuclease mimic, 11699
solution conformation of hexameric and heptameric lariat-RNA's and their self-cleavage reactions, 1777

Cobalt and compds
alkyne dicobalthexacarbonyl complexes from cobalt bromide, synth and use in Pauson-Khand cyclopentenone synth, 6955
$\eta^2Co_2(CO)_6$ acetylene complexes as intermediates in synth of esperamicin, calicheamicin, diynemicin and neocarzinostatin antitumour agents, 1397
cobaloxime(I), reaction with quaternary ammonium salts leading to group transfer from nitrogen to cobalt; model for the cobalamin-dependent methionine synthase reaction, 8863
see also Nicholas reaction, Pauson-Khand reaction

Coenzymes
S-(2,2-difluoro-3-oxohexadecyl)-coenzyme A and *S*-(3,3-difluoro-2-oxopentadecyl)-coenzyme A, synth and inhibitory activity

against *N*-myristoyltransferase (NMT), 9847
Colloids, *see* Micelles
Complexation
of amino acids by cyclotetrachromotropylene in aqueous solution, importance of CH-π and π-π interactions, 3453
complex formation properties of oligodeoxyribonucleotides covalently linked to stabilising agents of the coumarin family, 4009
Li-O *versus* Li-N complexation, effect on configurational stability of chiral lithio α-amino carbanions, 6089
short intermolecular S...S contacts in a reaction product from the cyclic sulfate ester of dimethyl L-tartrate and 2-thioxo-1,3-dithiole-4,5-dithiolate, 11205
Configuration
absolute – of AAL-toxins TA1 and TA2, host-specific toxins produced by *Alternaria alternata*, 13347
Conformation
analysis of 2-chloro-2-fluoroacetaldehyde and calculated transition state structures of nucleophilic addition reactions, 11197
analysis of 4-aryl-2,2,6,6-tetramethylheptane-3,5-diones, dipole moment determinations and molecular mechanics calculations, 11213
circular dichroism studies of calicheamicin-DNA interaction; evidence for calicheamicin-induced DNA conformational change, 1341
conformation of bilirubin analogues with *N,N*-methylene bridges, 9919
conformational analysis of 2,3-disubstituted 1,4-dithianes by NMR spectroscopy and MMX calculations, 10107
conformational analysis of 2-halotetrahydrothiopyran *S*-oxides, diminution of the anomeric effect in S(O)-C-X compared to S-C-X segments, 4937
conformational analysis of 9-deoxy-9a-aza-9a- and 9-deoxo-8a-aza-8a-homoerythromycin A 6,9-cyclic iminoethers, 12201
conformational analysis of [5,7] ortho-cyclophanes, [7,7] cyclophanes and corresponding macrobicyclic cryptophanes, 7815
conformational analysis of an antitumour cyclic pentapeptide, astin B, from *Aster tataricus*, 11613
conformational analysis of the carbohydrate portion of T and TN haptens by NMR spectroscopy and molecular modelling, 77
conformational analysis of a cyclic depsipeptide calcium blocker from *Hapsidospora irregularis*, leualacin, by NMR spectroscopy, 6537
conformational analysis of δ-lactams substituted at C-5 by an oxygen atom, 7947
conformational analysis of dirithromycin and epi-dirithromycin, 3857
conformational analysis of *N*-glycopeptides that contain extended sugar chains, 2373
conformational analysis of salicifoline, isosalicifoline and (–)-epinortrachelogenin, benzylidene-benzyl-γ-butyrolactone-type lignans from leaves of *Bupleurum salicifolium*, 5203
conformational analysis and synth of bridged anabasine, 5,8,9,10,11,11a-hexahydro-6*H*-pyrido[2,1-*f*][1,6]naphthyridine, 9909
conformational analysis of thymine 1-(1-deoxy-β-D-psicofuranosyl)nucleoside, 6689
conformational analysis of tricyclic analogues of artemisinin, 957
conformational analysis of a tyrosinase inhibitory cyclic pentapeptide, pseudostellarin A, from *Pseudostellaria heterophylla*, 12599
conformational change promoted by 3'-ethylphosphate at the branch-point of a tetrameric lariat-RNA, self cleavage reaction model, 8711
conformational comparison of cyclo-[(*S*)-His-(*S*)-Leu] and cyclo-[(*S*)-His-(*S*)-Phe] as catalysts for asymmetric addition of cyanohydrins to aldehydes, 7933
conformational studies by dynamic NMR, gear effect in substituted pyridones, 2561
conformational studies of *cis* and *trans* deoxy-schizandrins formed by the non phenolic oxidative coupling of diarylbutanes using ruthenium(IV) dioxide dihydrate, 1153
conformational studies and stereochemical assignments of the lactarane sesqui-

terpenes furoscrobiculin D and blennin D, 1211
conformationally constrained (±)-2-*endo*-amino-6-*exo*-(methylthio)[2.2.1]heptane-2-*exo*-carboxylic acid, synth from 5-norbornen-2-ol, 12973
of dimethoxy[n.2]metacyclophanes (n=2-6), 12159
heptapeptides bearing a host and a guest side chain, design and synth, 989
of 2'- and 3'-hypermodified tricyclic nucleosides, 4921
of α-imide substituted radicals generated from the corresponding Barton esters, stereoselective reactions of, 7029
of the indolo[2,3-*a*]quinolizidine skeleton, 3537
preparation and conformational study of *Z*- and *E*-isositsirikine epimers, determination of their C16 configurations, 9207
of *sec*-alcohols derived from macrocyclic lactones of resocylic acid, correlation of − and their stereoselective transacetylation in organic solvents by *Pseudomonas fluorescens* lipase, 13753
solution - of hexameric and heptameric lariat-RNA's and their self-cleavage reactions, 1777
solution - of tetra and hepta peptides containing α,β-dehydrophenylalanine residues in alternate positions, 907
study on β-galactopyranosyl-(1-3) and (1-4)-xylopyranosides by NMR, molecular mechanics, molecular dynamics and semiempirical calculations, 6417
study of folded vitamin D conformation in solution by synth of 11-fluoro-1α-hydroxyvitamin D_3 by fluorination of the corresponding 11-hydroxy derivs using FAR and DAST, 7049
substituent effects on 1,3-dipolar cycloadditions to some 1,1-diphenyl-2-aza-1,3-butadiene derivs, 3773
cis- and *trans*-1-(3'-substituted-propyl)-benzo[*a*]quinolizidinones and quinolizidines, 4873
supramolecular host systems; structural and conformational study of the 1,3,5,7-tetraoxadecalin core system, 9691, 9707
synth and activity of conformationally restricted hybrids of CP-55,940 and (−)-9-nor-9β-hydroxyhexahydrocannabinol (HHC), 2671
zinc *meso*-tetraphenylporphyrin as shift reagent for NADH-models, 8227

Copper and compds
copper(I) bromide as catalyst for synth of 3-methoxy-2,5-dimethylthiophene and 3,4-dimethoxy-2,5-dimethylthiophene from 3,4-dibromo-2,5-dimethylthiophene and sodium methoxide, 11533
copper(I) thiolate complexes derived from mercaptoaryl-oxazoline ligands as − in enantioselective 1,4-additions of Grignard reagents to enones, 4467
Cu-HZSM-5 zeolite as catalyst for reaction between halobenzenes in synth of phenols, 12913
Cu(II) complexes of bis(oxazolinyl)pyridine type ligands, ligands for asymmetric cyclopropanation reactions, 13725
higher order dialkylcyanocuprates, reaction with *gem*-bistriflates; dialkylation, alkylative reduction and olefination of aliphatic aldehydes, 13231
organocopper reagents, 1,4-addition to ethyl 3-[(*S*)-2,2-dimethyl-1,3-dioxolan-4-yl]propenoate, 13173
organocopper reagents, rection with allylic sulfides bearing two different leaving groups, chemo-, regio- and enantioselective synth of homoallylic alcohols, 7283
scalemic tetraamines (DIMAPP ligands) as chiral cuprate ligands in enantioselective conjugate addition of *n*-butyl to enones, 4455
transformation of hydrocarbons into ketones/alcohols and alkenes, application of t-butyl hydroperoxide and dioxygen using soluble Fe(III) and Cu(II) chelates, 2665

Coumarins
isocoumarins from Lewis acid catalysed cyclisation of tetrahydropyranones, 8445
monosulfur and monoselenium analogues of psoralens (derivs of furo[3,2-*g*][1]-benzopyran-7-one), synth as DNA photoinactivating agents, 9315
sodium borohydride reduction of − encapsulated in β-cyclodextrin, selectivity in, 12979
3-substituted 2*H*-1-benzopyran-2-ones,

synth by 1,3-dipolar cycloaddition reaction of ethyl diazoacetate, 13023
Coupling reactions
of 3-bromo-5,6,7,8-tetrahydrojuglone and 3-methoxy-5-methyl anthranilic acid, synth of WS-5995-B , an anticoccidial antibiotic from *Streptomyces auranticolor*, 2543
of aryl(halo)silanes with aryl halides, synth of functionalised biaryls, 8301
between aryltin compds and α-bromoenone derivs, synth of substituted quinoline derivs as route towards synth of dynemicin A, 5621
C-C coupling reactions of lithium enolates of protected glycine esters and isothiocyanates, synth of β-enamino esters, 11509
cross-coupling reaction of 2,3-alkadienyl carbonates with organoboron, synth of 2-substituted 1,3-butadiene, 7961
cross-coupling reactions between organostannanes and organic halides, synth of 2-substituted alkyl (*Z*)- and (*E*)-2-alkenoates and (*Z*)- and (*E*)-α-ylidene-γ-butyrolactones, 12029
cross-coupling reactions of organic halides catalysed by palladium complexes containing rigid bidentate nitrogen ligands, 323
desilylative cross-coupling of silyl enol ethers and allylic silanes to γ,δ-unsaturated ketones *via* oxovanadium-induced chemoselective one-electron oxidation, 10207
electrochemical reductive coupling of polyhalogenonitrobenzenes, mechanistic studies, example of radical anion dimerisation, 6913
6-halopurines in palladium-catalysed coupling reactions with organotin and organozinc derivs, 9743
of α-hydroxysulfinates with methane- or *p*-toluene-sulfonamides, synth of *N*-methane- or *p*-toluene-sulfonyl α-aminosulfinic acid salts, 5401
of γ-iodoallylglycine deriv and an *E*-δ-iodoallylglycine deriv with various organic nucleophiles; elaboration of the side chain of α-amino acids, 2623
non phenolic oxidative coupling of diarylbutanes using ruthenium(IV) dioxide dihydrate, synth of *cis*- and *trans*-deoxy-schizandrins, 1153
palladium catalysed coupling of a stannylated pyridine with an aromatic triflate in synth of pentacyclic analogues of the retinoid temarotene, 2459
palladium-catalysed domino coupling reactions of aryl halides with norbornene and norbornene derivs, synth of polycyclic aromatic compds, 383
pinacol coupling of aliphatic aldehydes promoted by niobium(III) reagent, synth of diols, 2841
stannylpyrimidines in coupling and tin-lithium exchange reactions, 275
Stille couplings of a γ-tri-*n*-butylstannylallylglycine deriv and an *E*-δ-tri-*n*-butylstannylallylglycine deriv, elaboration of the side-chain of α-amino acids, 3213
of thienylstannanes with thienylbromides, synth of 3,4'- and 3,3'-di(2-hydroxyethyl)-2,2'-bithiophene, 11249
of trialkylsilylated diols and pyruvates, synth of pyruvate acetals of carbohydrates, 12143
of vinyl triflates with 9-alkyl-9-borobicyclo[3,3,1]nonanes, total synth of (−)-isoseiridine, 5489
Crown ethers
addition reactions of *gem*-dichloroallyl lithium to benzophenones in the presence of 12-crown-4 and cryptand-[2.1.1], synth of chloro oxiranes, 8169
alkaline complexes of macrolactones and −, influence of the position and characteristics of biphenyl substituents on association constants, 5381
bis(3,5-diketo-1*H*-pyrazole)-[26]crown-12, synth as neutral and dianionic ligand, preparation of the disodium dipyrazolate salt and the mono- and di-nuclear complexes of Zn^{2+}, 4765
heptapeptides bearing a host and a guest side chain, design and synth, 989
1,4,7,10,13,16,19-heptathiaheneicosane (21-S-7) and 1,4,7,10,13,16,19,22-octathiatetraeicosane (24-S-8), macrocyclic thiocrown ethers, synth, 2095
macrocyclic crown-formazans, synth by azo coupling of bis-diazonium salts with pyruvic and arylpyruvic acids, 11489

Cryptands
cryptand[3.3.3]-potassium iodide complex from 1,11-diiodo-3,6,9-trioxaundecane and 1,11-diamino-3,6,9-trioxaundecane, 2721
Cubanes
4,4,6,7-tetrasubstituted pentacyclo-[6.3.0.$0^{2,6}$.$0^{3,10}$.$0^{5,9}$]undecanes, D_3-trishomocubanes, synth, 8597
Cumulenes
chlorocumulenes and chloroalkenes, dipole moments of, identification of stereoisomers based on dielectric studies, 1707
Cyano compds
alkyl cyanides from hydrocarbons by utilization of the $GoAgg^{IV}$ system in the presence of tetraethylammonium cyanide, 47
asymmetric Michael reaction of α-cyano carboxylates catalysed by a rhodium complex with *trans*-chelating chiral diphosphine RhTRAP, 4439
3-cyano- and 7-cyano-3*H*-azepin-2-(1*H*)-ones by photo-induced ring expansions of *o*-azidobenzonitriles, 5515
cyanoketones and *N*-cyanoamines, fate of the cyano group in the reduction of, 8203
p-cyanomethylcalix[4]arene, conversion into highly-substituted calix[4]arenes, 4087
ellipticine derivs by modification of the cyano group of 1-cyano-6-methylellipticine, 2551
ethyl cyanoimidazolecarboxylates, regioassignments by nOe studies on monocyanoimidazoles, 2641
hydroxy-substituted benzo[*b*]carbazoloquinone cyanamides, intermediates towards kinamycin antibiotics, synth based on palladium-promoted oxidative coupling, 10893
2-(3,4,5-trimethoxyphenyl)-4-(3,4-methylenedioxyphenyl)-4-oxo-2-butenonitrile (β-cyanochalcone) and its related compds, photochemistry of, 9287
see also Cyanohydrins, Nitriles
Cyanohydrins
asymmetric addition to aldehydes, conformational comparison of cyclo-[(*S*)-His-(*S*)-Leu] and cyclo-[(*S*)-His-(*S*)-Phe] as catalysts, 7933
by enantioselective addition of trimethylsilyl cyanide to aldehydes using a chiral Schiff base-titanium alkoxide complex as catalyst, 4385
from diastereoselective hydrocyanation of α-sulfinyl cycloalkanones, 7567
syn β-hydroxycyanohydrins and *anti* 2,4-dihydroxyamides by cyanide addition to β-hydroxyketones, 8169
O-mesylcyanohydrins of furanos-2'-ulosyl cytosine, reactions with bases, synth of β-D-arabino- and ribo-2'-spiro substituted nucleosides, 11013
Cyclic ketones
anthrone, asymmetric base-catalysed cycloaddition between – and some dienophiles, 4543
3-arylcycloalkanones by arylation of 2-cycloalken-1-ols by aryl iodides, 305
bicyclo[3.2.0]hept-3-en-6-ones from 3-hydroxy-6-heptenoic acids, subsequent oxidation to 3,3a,4,6a-tetrahydro-2*H*-cyclopenta[*b*]furan-2-ones, 7645
bicyclo[3.2.0]hept-3-en-6-ones, synth from 3-hydroxy-6-alkenoic acid and subsequent synth of grandisol and lineatin, 3235
2-t-butylcyclohexanone, reduction with diisobutylaluminium-2,6-di-t-butyl-4-methyl phenoxide, study of temperature dependence of the diastereoselectivity, 6819
α-camphidone, conversion to (1*R, cis*)-3-aminomethyl-1,2,2-trimethylcyclopentane-methanol, an intermediate in the synth of carbocyclic nucleoside analogues, 2175
S-(+)-carvone, addition of cyanide and Grignard nucleophiles followed by annulation to functionalised decalones, intermediates in total synth of drimane sesquiterpenes and (–)-Ambrox, 10073, 10083, 10095
chiral 2-*p*-tolylsulfinylcycloalkanones, stereoselective reduction with DIBAL and DIBAL/$ZnCl_2$, 9355
cycloalkanones, counterion effect on stereochemistry of reduction of - by alkali metals in ammonia, 3149
2-[(*Z*)-haloiodomethylidene]bicyclo[3.2.1]-octan-3-one and 3-[(*Z*)-haloiodomethylidene]bicyclo[3.2.1]octan-2-one by ring expansions of 2-haloethynyl-2-nor-

bornals, 11793
4-hydroxycyclopent-2-en-1-one and derivs as chiral synthetic equivalents of cyclopentadienone in Diels-Alder reactions, 8515
substituted 2-cyclohexenones and hexahydronaphthalenones and hexahydroindenones by tandem Michael-Dieckmann addition of lithium dienediolates of carboxylic acids to the lithium salts of carboxylic acids, 2571
α-sulfinyl cycloalkanones, diastereoselective hydrocyanation of –, 7567
tropolones by rhodium(II)-catalysed reactions of vinyldiazomethanes with oxygenated dienes, 9883
Cyclisation
N-acyliminium ion – to 3-azabicyclo-[3.3.1]nonanes, intermediates in synth of 2,4-disubstituted 1-aza-adamantanes, 8853
alkyl and malonate radical – of methylenecyclopropane derivs, 11267, 11289
of 2-alkynyl-anilines, -phenols, and -benzamides, synth of methyl 2-substituted indole and benzo[*b*]-furan-3-carboxylates and 3-alkylidenisoindole derivs, 11803
1,5-allylic abstraction-cyclisation reaction in free radical approach to cyclopentanone and spirocyclic systems, 13523
of aminyl radicals generated from sulfenamides, synth of pyrrolizidines and other polycyclic nitrogen heterocycles, 1275, 1295
apoprotein-assisted - of neocarzinostatin chromophore, 1311
arynic – of imines or enaminoketones prepared from halogeno anilines and carbonyl derivs and promoted by $NaNH_2$-t-BuONa, synth of indoles, 11903
carbonyl-ene cyclisation/cycloalkylation of trifluoromethyl ketones, route to trifluoromethyl diterpenoids, 11921
copper(I)chloride/2,2'-bipyridine catalysed – of di- and trichloroacetates, synth of medium-sized lactones, 12415
diketopiperazine cyclisation of Glu-Asp dipeptide esters and Asp-racemisation during segment condensation in solution synth of a dimeric pentapeptide, 2277
of dipeptides derived from Boc anthranilic acid and α-amino acid methyl esters, synth of 1,4-benzodiazepin-2,5-diones, 9051
double – of ω-chloro azidoalkenes, synth of fused-bicyclic iminium ions, 12293
of 6,7-epoxygeranyl acetate, synth of (±)-karahana ether and karahanaenone, fragrant monoterpenes from Japanese hop *Shinshu-wase*, 13239
of glucal halohydrins, effect of the halide on glucal epoxide formation, 6783
high temperature radical cyclisation anomolies in the tandem enediyne-bis-radical cyclisation, 4635
Lewis acid catalysed – of tetrahydropyranones, synth of isocoumarins, 8445
Lewis acid mediated electrophilic – of ω-alkenyl benzylselenides, synth of arylcycloalkanes, 7177
π- of methyl 2-acetoxy-2-(3-alken-1-oxy)-acetates, role of the 2-oxonia Cope rearrangement, 7115, 7129
Michael Initiated Ring Closure reaction (MIRC), asymmetric induction in, 5591
Nafion-H catalysed - of α-carbomethoxy-α-diazoacetanilides, synth of 3-unsubstituted-2-indolinones, 609
oxaspirocyclisations, oxidation of 1-(3-hydroxyalkyl) and 1-(4-hydroxyalkyl)-1,3-cycloalkadienes and total synth of theaspirone, 559
oxidative – of homoallyl alcohols under heterogeneous permanganate oxidation conditions, synth of medium-ring keto lactones, 11709
3-oxosecodine in synth of (±)-3-oxovincadifformine ethyl ester, an aspidosperma alkaloid, 6941
palladium(0)-catalysed – carbonylation of 2,7-octadienyl acetate and homologues, synth of bicyclo-[3.3.0] and [4.3.0] skeletons, 5705
palladium catalysed – -carbonylation of allylic 2-alkynoates, synth of α-alkylidene-γ-butyrolactone β-acetic acid derivs, 9067
palladium-catalysed bis-cyclisation step in total synth of (±)$\Delta^{9(12)}$capnellene, triquinane marine sesquiterpene, 403
palladium-catalysed carbonylative - of 2-alkynyltrifluoroacetanilides with aryl halides and vinyl triflates, synth of

2-substituted-3-acylindoles, 437
palladium-catalysed carbonylative - involving ω-acyl-substituted acyl-palladium, intramolecular trapping with either C- or O-enolates, 425
palladium-catalysed Heck-type cyclisation reactions for generation of 5,5-, 5,6- and 5,7-spiroindolines, 359
palladium-copper mediated cyclisation of *endo*-5-vinyl-2-norbornene, synth of substituted brendanes and subsequent oxidation to the quinane system, 539
pericyclic reactions in nature; [1.7]-hydrogen shift and an 8π*e* electrocyclic ring closure in the biosynthesis of plant pheromones from marine brown algae phaeophyte *Cutleria multifada*, 10235
PET promoted – of 1-[*N*-alkyl-*N*-(trimethylsilyl)methyl]amines tethered to proximate olefin, synth of pyrrolidines and piperidines, mechanistic and synthetic perspectives, 8185
Pictet-Spengler – of iminium intermediates derived from reaction between *N*-β-(3-indolyl)ethyl amino acid esters and substituted aromatic aldehydes, synth of tetrahydro-β-carbolines, 11865
polyene cascade – mediated by $BF_3.CH_3NO_2$; synth of polycyclic intermediates *via* cationic initiation at non-functionalised 3° alkenes, total synth of (±)-taxodione, 9229
of primary or secondary alkenylzincs, prep of cyclopentylmethylzinc derivs, 11665
radical - of bromobenzylisoquinolines and benzylisoquinol-3-ones, synth of aporphines or 5-oxoaporphines and 5-oxodehydroaporphines respectively, 2107
radical – of *gem*-chlorofluoroheptenols, synth of monofluorocyclohexanols, 12361
radical – on sugar templates, synth of fused furanopyranes, 5369
radical cyclisations of dienes and enynes using phosphorus- and sulfur-centred radicals, 13533
and rearrangement of phenyliodoniophenolates derived from 1,3-dihydroxybenzene derivs, 11541
samarium(II) iodide-mediated ring closures of substituted *N*-allyl derivs or *N*-propargyl substrates from L-serine, synth of 2,3,4-trisubstituted pyrrolidine derivs, 9411, 9425
sulfenocyclisation of alkenes and alkynes using 4'-nitrobenzenesulfenanilide, 12395
tandem radical cyclisations for synth of lysergic acid derivs, 2183
of terminally substituted 5-hexenyllithiums, mechanism, 5957
α- – of tertiary amines, push-pull enamines form pyrrolines, pyrrolizidines and their ring homologues with dimethyl acetylenedicarboxylate, 7075
of α-thiocyanato-β-dicarbonyl compds to thiazole and oxathiole heterocycles, 7253
transition metal-catalysed chlorine transfer cyclisations of carbon-centred glycine radicals, route to cyclic α-amino acids, 1907

Cyclitols
(+)-fortamine and pseudosugars of the allo-, gulo, manno- and talo-series, synth from (1*R*,2*S*,3*R*,4*S*)-4-butyryloxy-2,3-isopropylidenedioxy-5-cyclohexen-1-ol, 7061

Cycloaddition
1,3- of 3-nitro-2-phenyl-2*H*-1-benzopyrans to diazoalkanes, synth of benzopyranopyrazole derivs, 4623
[4+2]– of 2-alkyl-3-iminomethylchromones with *N*-phenylmaleimide, synth of 2-azaxanthones, 4905
1,3- - of azomethine ylids generated from 2-(t-butyl)-3-methylimidazolidin-4-one, 189
of benzotriazolylmethylaminosilanes with dipolarophiles to give pyrrolidines or 2,5-dihydropyrroles, 12571
[4+2] – between anthrone and some dienophiles catalysed by chiral β-aminoalcohols, 4543
1,3- – of *C*-methyl-*N*-phenylnitrone to substituted styrenes, stereochemistry, 6671
catalytic asymmetric [2+2] – between 3-(2-alkenoyl)-1,3-oxazolidin-2-ones and 1,2-propadienyl sulfides, synth of methylenecyclobutanes and their transformation to medium-sized carbocyclic compds, 4529
of chiral thiaalkenyl nitrones, synth of bicyclic compds, 3929
[4+2]- and [2+4]-cycloaddition processes of 4,5-dicyanopyridazine with 2,3-di

methylbuta-1,3-diene, 9189
cycloaddition-elimination reactions with substituted acetylenic compds, synth of 3-functionalised 5-chloro-6-methyl-2*H*-1,4-oxazin-2-ones and pyridines, 5211
Diels-Alder - of 3-borylpropenoic acid derivs and their use as synthetic equivalents of *E*-β-hydroxy acrylic acid and *E*-β-hydroxy vinylamine, 3397
Diels-Alder – of methyl acrylate to facially differentiated unsymmetrical cyclohexa-1,3-dienes, diastereofacial selectivity in, 13037
Diels-Alder - for synth of diaryl ethers as intermediates in preparation of polycyclic compds, 3407
1,3-dipolar – of cyclic and acyclic nitrones with dimethyl maleate, formation of cycloadducts with *trans*-configurated ester groups, 7417
1,3-dipolar - of münchnones with acetylenic dipolarophiles, regioselectivity, 93
1,3-dipolar – of ethoxycarbonyl-nitrile benzylimine $EtOOCC{\equiv}N^{+}\text{-}N^{-}CH_2C_6H_5$, and synth of β-amino acids; reactions of ethyl 2-chloro-2-ethoxyacetate and 2-chloro-2-ethoxyacetyl chloride, 7543
1,3-dipolar cycloadditions to some 1,1-diphenyl-2-aza-1,3-butadiene derivs, substituent effects, 3773
[4+2]- – of 3,4-epoxy-2-methyleneoxolanes with oxadienes, synth of 3,4-epoxy-1,6-dioxaspiro[4,5]dec-7-enes, 8035
1,3- – of ethyl diazoacetate to 3-substituted 2*H*-1-benzopyran-2-ones, regio- and stereoselectivity, 13023
intramolecular [2+2] photocycloaddition for synth of meta- and three-bridged cyclophanes, 12159
intramolecular – of an azide with an ω-chloroalkene, synth of (±)-tylophorine alkaloid, 12293
intramolecular Diels-Alder – of unsaturated ketenimines, synth of benz[*f*]-indoles, 5027
intramolecular heterocycloaddition of chiral vinyl ethers, asymmetric synth of substituted dihydropyrans, 9037
intramolecular nitrone – for synth of fused γ-lactams, 5503
[4+2] – mediated by homochiral bisphosphines, 6145
2-methyl-, 2-phenyl-, and 2,3-trimethylene-1,4-benzodithiin-1,4-tetroxide, synth as equivalents to substituted acetylenes in cycloaddition reactions, 7913
of nitrile oxides to β-substituted-αβ-unsaturated aldehyde equivalents, reversing the regiochemical course, 7969
non-decarboxylative 1,3-dipolar cycloadditions of imines of α-amino acids as a route to proline derivs, 3159
of 2-ethoxybut-2-enal *N,N*-dimethylhydrazone with quinoline-5,8-diones or benzo[1,2-*b*]furan-4,5-diones, synth of furo[2,3-*f*]quinoline-4,5-diones, 8457
of acrolein to 3-methoxyestra-1,3,5(10),14,16-pentaen-17-yl acetate, synth of 14β-allylestrone and the derived 14α,17α-ethano analogue of estriol, 6363
of 4-oxo-4*H*-1-benzopyrans with substituents at C-3 to 1-alkoxy- or 1,1-dialkoxyalkenes, synth of 3-alkoxy- or 3,3-dialkoxy-4,4a-dihydropyrano[4,3-*b*][1]benzopyran-10-ones, 11755
of phenyl vinyl sulfone to 3-methoxyestra-1,3,5(10),14,16-pentaen-17-yl acetate, synth of 16-functionalised 14α,17α-etheno-19-norsteroids, 6347
of (*Z*)-2-phenyl-4-benzyliden-5(4*H*)-oxazolone and of methyl (*E*)-2-cyanocinnamate, subsequent transformation of adducts to 2-phenyl-4-oxo-1-amino-cyclohexanecarboxylic acids, 12989
pericyclic reactions of 2-oxo-1,3-bis-(ethoxycarbonyl)-2*H*-cyclopenta[*a*]acenaphthylene with nonconjugated dienes, cycloaddition reactivity of the decarbonylated cycloadducts, 13395
photoinduced - of chloranil with alkenes – factors influencing the reaction site, 1199
photosensitised [2+2]-cycloaddition reaction of ethylene to 5-alkoxy-2(5*H*)-furanones, mechanism of diastereoselection, 11167
of pyrroline *N*-oxide and tetrahydropyridine *N*-oxide to phenyl vinyl ketone, synth of 5-benzoyl substituted isoxazolidines, 12713
reactions of 1,3-diaza-1,3-butadienes with haloketenes, rearrangements accompanying –, 7579
reactions of nitrile oxides and nitrilimines with 2-ethoxypyrrolin-5-one, 2-ethoxyiso-

indol-3-one and 2-ethoxy-1*H*-indol-3-one, 5159
of sugar derived azomethines with Danishefsky's diene, synth of swainsonine-analogues hydroxyindolizidines, 13671
Cycloalkanes
1-alkoxy-2-fluoro-1-phenyl benzocycloalkanes by reactions of 1-phenylbenzocycloalkenes with cesium fluoroxysulfate in alcohols, stereochemistry and relative rates, 12235
arylcycloalkanes from ω-alkenyl benzylselenides on reaction with alkyllithiums or on electrophilic cyclisation, 7177
1,2-dibenzocycloalkanes, effect of ring strain on zinc reductions of, 2949
homosubstituted monocyclic cycloalkanes, enumeration of chiral and achiral skeletons of position isomers of–, 6663
Cycloalkenes
functionally-substituted cycloalkenes, intermolecular arylation by aryl iodides, 305
4- to 9-membered 1-methoxycycloalkenes, NMR, force field and MNDO studies on, 5795
Cyclobutanes
asymmetric synthesis of methylenecyclobutanes and their transformation to medium-sized carbocyclic compds, 4529
tandem ring expansion and insertion reaction of alkenic cyclobutanols mediated by palladium, synth of bicyclo-[4.3.0]nonane systems, 10391
Cyclobutanones
dichlorocyclobutanones, allylation of – and sequential ring expansions, synth of *cis*-fused cycloheptanones, 12579
Cyclobutenones
4-acylmethyl-2-chloro-4-hydroxy-2-cyclobutenone, ring transformation to γ-acylmethylenetetronate by thermal rearrangement, 7783
Cyclodextrins
β-cyclodextrin complex, asymmetric bromination of chalcone and benzylideneacetone in –, 7903
β-cyclodextrin, effect of – on sodium borohydride reduction of coumarin, 12979
Cycloheptanones
by allylation and sequential ring expansions of dichlorocyclobutanones, synth of *cis*-fused cycloheptanones, 12579
Cycloheptenes
furano bisbenzocycloheptene, a 5,8-bis-epimer of the tetra-*O*-methyl deriv of metasequirin B, a norcycloneolignan, synth, 3363, 3363
Cycloheptenones
favelol, isofavelol and favelone, benzocycloheptenone derivs from the bark of *Cnidoscolus phyllacanthus*, structures, 5659
Cyclohexanes
by Michael-Michael-aldol reaction of simply substituted ketones with methyl methacrylate, 9061
cis- and *trans*-4-methylcyclohexanols, solvent effects on the lipase-catalysed transesterifications of, 4681
1-methylene-2-methyl-2-(2-oxopropyl)-cyclohexanes, isomerisation to 2-methylene-1-methyl-1-(2-oxopropyl)-cyclohexanes by ene and retro-ene reaction, 8765
trans-2-alkoxycyclohexan-1-ols, synth by hydrolysis of *trans*-1-acetoxy-2-alkoxycyclohexanes using pig liver acetone powder as a biocatalyst, 10521
Cyclohexanols
monofluorocyclohexanols through radical cyclisation of *gem*-chlorofluoroheptenols, stereochemistry, 12361
Cyclohexanones
substituted 2-cyclohexenones and hexahydronaphthalenones and hexahydroindenones by tandem Michael-Dieckmann addition of lithium diene diolates of carboxylic acids to the lithium salts of carboxylic acids, 2571
Cyclohexenes
trans-3,4,5,6-diepoxycyclohex-1-ene (*anti*-benzene dioxide), reaction with various nucleophiles, 3709
3-ethylidenecyclohexenes and isomeric ethylcyclohexadienes, thermodynamic stabilities of, 11693
Cyclopentanes
(1*R*,*cis*)-3-aminomethyl-1,2,2-trimethylcyclopentane-methanol from α-camphidone, synth as an intermediate in the synth of carbocyclic nucleoside analogues, 2175
from conjugate addition of allylsilanes to αβ-unsaturated *N*-acyloxazolidinone at

room temperature, 1073
Cyclopentanones
free radical approach to – and spirocyclic systems; development of a 1,5-allylic abstraction-cyclisation sequence, 13523
Cyclopentenes
functionalised - by rearrangement of 3,3-bis(methylthio)-1-(arylcyclopropyl)-2-propen-1-ols, 255
4-hydroxycyclopent-2-en-1-one and derivs as chiral synthetic equivalents of cyclopentadienone in Diels-Alder reactions, 8515
(–)-kjellmanianone cyclopentenoid from (+)-tricyclo[5.2.1.$0^{2,6}$]decadienone 2-carboxylic ester, 10597
Cyclopentenones
by Pauson-Khand reaction using alkyne dicobalthexacarbonyl complexes, 6955
(–)-2-methyl-4-trimethylsilyl-2-cyclopenten-1-one, synth and use in synth of (–)-$\Delta^{9(12)}$-capnellene, 655
Cyclophanes
acenaphane derivs from furan macrocycles, 9113
cage-type cyclophanes having a helically twisted and cylindrical internal cavity, specific molecular recognition by–, 13601
dimethoxy[n.2]metacyclophanes (n=2-6), stereoselective synth by intramolecular [2+2] photocycloaddition using the steric effect of methoxy group, 12159
[10] heterophanes, synth from 2-nitrocyclododecanone by ring enlargement, 8665
meta and *para*cyclophanes, synth, 4575
[5,7] orthocyclophanes, [7,7] cyclophanes and corresponding macrobicyclic cryptophanes, synth involving the Baylis-Hillman reaction of dialdehydes with methyl acrylate, conformational analysis, 7815
Cyclopropanation
asymmetric – using bis(oxazolinyl)pyridine type ligands, 13725
Cyclopropanes
1-aminocyclopropanecarboxylic acids, synth from α,β-didehydroamino acid derivs, 9157
azaannulated and aminoannulated - as building blocks for oligoamines, 715, 731
benzylidenecyclopropane derivs, metalation with lithium metal, regioselective carbon-carbon σ-bond scission followed by 1,6-proton shift, 2439
cyclopropanation of *N*-allylic- and *N*-homoallylic diazoacetamides catalysed by chiral dirhodium(II) catalysts, 1665
enantioselective intramolecular cyclopropanation of *N*-allylic- and *N*-homoallylic diazoacetamides catalysed by chiral dirhodium(II) catalysts, 4519
methylenecyclopropane derivs, alkyl and malonate radical cyclisations, 11267, 11289
sulfur substituted - from organothio sulfonyl carbenes, 3721
Cyclopropenes
bicyclopropenyls, synth by elimination of β-halocyclopropylsilane precursors over solid fluoride, 10693
Cycloundecanes
4,4,6,7-tetrasubstituted pentacyclo-[6.3.0.$0^{2,6}$.$0^{3,10}$.$0^{5,9}$]undecanes, synth, 8597
Cytotoxins
activity of 1,2,3,4-tetrahydro-2-*N*-methyl-8-hydroxymanzamine A isolated from *Petrosia* and *Cribochalina* sponges, 13567
(+)-altholactone, *cis*-fused tetrahydrofurano-2-pyrone from *Polyalthia* and *Goniothalamus giganteus*, total synth from diethyl L-tartrate, 11315
bilirubin, cytotoxic yellow-orange pigment of jaundice with two dipyrrinone chromophores, synth and spectroscopic properties of *N,N*-bridged dipyrrinones, 1955
4'-deoxy C-3'-homo anthracyclines, synth from (*S*)-propylene oxide, cytotoxic activity, 1165
discodermins F-H, cytotoxic and antimicrobial tetradecapeptides from the marine sponge *Discodermia kiiensis*, structure revision of discodermins A-D, 13409
discorhabdin C, batzelline C and isobatzelline C, pyrroloquinoline alkaloids, synth and cytotoxic study of intermediates, 2017
dolastatine 10 and [*R*-Doe]-dolastatine 10 from marine mollusc *Dolabella auricularia*, synth, 5345
doliculide, cytotoxic cyclodepsipeptide

from the Japanese sea hare *Dolabella auricularia*, total synth, 12853
dl-duocarmycin, its 2-epimer, (+)-duocarmycin A and its three isomers, antitumour antibiotics from *Streptomyces* sp., synth and cytotoxic activity against P388 murine leukemia, 2793, 2809
ellipticine 5,11-dimethyl-6*H*-pyrido[4,3-*b*]-carbazole, chlorination of – *via* its *N*-oxide, synth and selective acetylation of 5,6,11-trimethyl-5*H*-benzo[*b*]carbazole, 4811
19,20-epoxycytochalasin Q and deacetyl analogue, cytotoxic cytochalasins from *Xylaria obovata*, structures, 5615
4-hydroxynon-2-enal, a cytotoxic lipid peroxidation product, and its C_5-analogue 4-hydroxypent-2-enal, synth and stereoanalysis, 10245
makaluvamines A-E, cytotoxic pyrroloiminoquinone alkaloids from marine sponge *Zyzza* cf. *marsailis* and *Histodermella* sp., inhibitory activity against topoisomerase II, 13593
paniceins and renierins from the sponge *Reniera mucosa*, structure, 8153
phloeodictines A1-7 and C1-2, antibiotic and cytotoxic guanidine alkaloids from the New Caledonian sponge *Phloeodictyon* sp., structures, 3415, 3415
purine and pyrimidine analogues of 1,4-anhydro-2-deoxy-D-arabitol and 1,4-anhydro-2-deoxy-3-hydroxymethyl-D-arabitol, cytotoxic activity against L1210 and KB cells, 10167
(−)-quinocarcin, antitumour antibiotic, cytotoxic activity, 6259
reidispongiolide A and B, potent cytotoxic macrolides from New Caledonian sponge *Reidispongia coerulea*, cytotoxicity, 4829
(±)-stemodin, tetracyclic diterpene from *Stemodia maritima* L, total synth *via* Pd^{2+}-promoted cycloalkenylation reaction, 3673
taxol side chain and norstatine by asymmetric reaction of chiral imines with α-silyloxy ketene acetals to prepare α-hydroxy-β-amino ester, 2785
theonezolides B and C, macrolides with various functionalities from Okinawan sponge *Theonella* sp., 8355

Decarboxylation
decarboxylative three carbon ring expansion of cyclic secondary α-amino acids *via* azomethine ylid formation, 5067
oxidative decarboxylation of acetyloleanolic, acetylursolic and dehydroabietic acids by hydrogen peroxide and a mercury(II) salt, synth of *nor*-derivs, 2591

Degradation
Edman – of hymenamides G-K, cyclic octapeptides from Okinawan marine sponge *Hymeniacidon* sp., 4667

Dehydration
thermal – and dethioacetalization of β-hydroxydithioacetals with dimethyl sulfoxide, synth of αβ-unsaturated aldehydes, 5783

Deoxygenation
deoxygenation *versus* dehydration and an overall 1,2-keto transposition in synth of α-thiosubstituted carbonyl compds from α,β-epoxysulfoxides, 5413
radical-based – of aliphatic alcohols *via* thioxocarbamate derivs using phenyl isothiocyanate, 10193

Diastereoselection
in cyanide addition to β-hydroxyketones, synth of *syn* β-hydroxycyanohydrins and *anti* 2,4-dihydroxyamides, 8169
diastereofacial selectivity in Diels-Alder cycloadditions of methyl acrylate to facially differentiated unsymmetrical cyclohexa-1,3-dienes, 13037
diastereoisomers including the α-alkoxy-β-hydroxy-β-methyl(phenyl) units, synth by chiral tin(II) Lewis acid-mediated asymmetric aldol reactions, 9629
enantio- and diastereoselective titanium-TADDOLate catalysed addition of diethyl and bis(3-buten-1-yl)zinc to aldehydes, 4363
exo diastereoselective Diels-Alder reactions of (*R*)-2-phenyl-4-methylene-oxazolidin-5-one, 941
influence of the geometry of the carbanionic moiety on the non-induced diastereoselectivity of [2,3]-Wittig rearrangement of lithiated diallyl ethers, 3687
mechanism of – in photosensitised [2+2]-cycloaddition reaction of ethylene to 5-alkoxy-2(5*H*)-furanones, 11167

predictions of which diastereoisomeric salt precipitates during an optical resolution *via* diastereoisomeric salt formation, 6907
temperature dependence of – of reduction of 2-t-butylcyclohexanone with diisobutylaluminium-2,6-di-t-butyl-4-methylphenoxide, 6819
see also Stereoselection
Diaza compds
8-alkyl-3-(1-phenylethyl)-7-oxa-1,3-diazabicyclo-[3.2.1]-octane-4,6-diones, synth and stereochemical behaviour directed to synth of α-substituted β-amino acids, 2955
1,3-diaza-1,3-butadienes, reactions with haloketenes, synth of pyrimidones, 7579
Diazepines
1,3,6-benzothiadiazepino[3,2-*a*]benzimidazole derivs and [5+5] rigid bicyclic guanidines by reaction of bis(iminophosphorane) with isocyanate, 10029
chiral 1,4-diazepinones and 1,4-thiazepinones by diastereoselective ring chain transformation of αβ-unsaturated lactones or lactams, 10701
9-*H*-pyrimido[4,5-*b*][1,4]diazepine derivs from 4,5-diaminopyrimidines and ethyl pyruvate, 13511
Diaziridines, diazirines
(*Z*)-18-[4-[3(trifluoromethyl)diazirinyl]-phenyl]-9-octadecenoic acid, photoactivatable, synth for protein kinase labelling, 3785
Diazo compds
N-allylic- and *N*-homoallylic diazoacetamides, enantioselective intramolecular cyclopropanation of – catalysed by chiral dirhodium(II) catalysts, 4519
N-allylic- and *N*-homoallylic diazoacetamides, intramolecular cyclopropanation of - catalysed by chiral dirhodium(II) catalysts, 1665
α-carbomethoxy-α-diazoacetanilides, cyclisation of, synth of 3-unsubstituted-2-indolinones, 609
diazoalkanes, 1,3-cycloaddition of 3-nitro-2-phenyl-2*H*-1-benzopyrans to –, synth of benzopyranopyrazole derivs, 4623
diazo(trialkylsilyl)-acetates, transition metal-catalysed decomposition of, formation and trapping of carbonyl ylids, 7435
lithio-diazomethane and lithio-(trimethylsilyl)diazomethane, theoretical and experimental studies of their structures, reactions and reaction products, 5889
vinyldiazomethanes, rhodium(II) catalysed reactions with oxygenated dienes, synth of tropolones, 9883
Diels-Alder reactions
of 4-acetoxy-2-cyclopenten-1-one and 2-bromo-4-acetoxy-2-cyclopenten-1-one with vinylarenes, synth of cyclopentaphenanthrenones, 10359
of the acrylate of D-pantolactone and cyclopentadiene in the presence of methylaluminium bis(4-substituted-2,6-di-t-butylphenoxide), 8983
of acyl-1,3-oxazolidin-2-ones catalysed by chiral lanthanide(III) trifluoromethanesulfonates; unique structure of the triflate and stereoselective synth of both enantiomers, 11623
asymmetric hetero – catalysed by stable and easily prepared (acyloxy)borane (CAB) complex, 4555
of 2-azadienes derived from cysteine and serine methyl esters and aldehydes, 13709
between aqueous solution of glyoxylic acid, pyruvaldehyde and glyoxal with cyclic or non-cyclic dienes, synth of cycloadducts and/or α-hydroxy γ-lactones, 10265
of 3-carbomethoxy-2-aza-1,3-butadiene derivs with dienophiles, 12375
catalysed by (acyloxy)borane (CAB) prepared *in situ* from tartaric acid and arylboronic acids, 979
cycloaddition of 3-borylpropenoic acid derivs and their use as synthetic equivalents of *E*-β-hydroxy acrylic acid and *E*-β-hydroxy vinylamine, 3397
cycloadditions of methyl acrylate to facially differentiated unsymmetrical cyclohexa-1,3-dienes, diastereofacial selectivity in, 13037
cycloadditions of (*Z*)-2-phenyl-4-benzyliden-5(4*H*)-oxazolone and of methyl (*E*)-2-cyanocinnamate, subsequent transformation of adducts to 2-phenyl-4-oxo-1-amino-cyclohexanecarboxylic acids,

12989
cycloadditions for synth of diaryl ethers as intermediates in preparation of polycyclic compds, 3407
of 2,5-dialkylfurans with fumaronitrile, temperature and substituent effects, 12125
Diels-Alder/RDA reaction for synth of 2-aminopyridines by reaction of 6-aminopyrimidin-4-(3*H*)-one derivs with dimethyl acetylenedicarboxylate (DMAD), 10345
of 3,4-epoxy-2-methyleneoxolanes with oxadienes, synth of 3,4-epoxy-1,6-dioxaspiro[4,5]dec-7-enes, 8035
exo diastereoselective - of (*R*)-2-phenyl-4-methylene-oxazolidin-5-one, 941
hexachlorocyclopentadiene in - with chiral dienophiles L-menthyl acrylate and L-menthyl allyl ether, 2099
4-hydroxycyclopent-2-en-1-one and derivs as chiral synthetic equivalents of cyclopentadienone in –, 8515
intramolecular – cycloaddition of unsaturated ketenimines, synth of benz[*f*]indoles, 5027
with 2-methylpyridazin-3(2*H*)-ones bearing ethylsulfonyl, cyano and methoxycarbonyl groups at the 4- or 5-position, 5169
pericyclic reactions of 2-oxo-1,3-bis(ethoxycarbonyl)-2*H*-cyclopenta[*a*]acenaphthylene with nonconjugated dienes, cycloaddition reactivity of the decarbonylated cycloadducts, 13395
PM3 calculations of Diels-Alder reactions of "pull-push" activated isoprenes with aceto- and acrylonitrile, 10379
of 2,5,8(1*H*)-quinolinetriones, regioselectivity of, 7923
of a series of 2-sulfone substituted 1-furyl-4-penten-1-ols, synthetic and kinetic studies of substituent effects, 6767
of α-substituted acrylates and α-(methylene)lactones; conformation of dienophiles and *endo/exo* selectivity, 10839
successive intramolecular - in synth of the A, B, C and D ring fragment of diterpene stemodin from 1,4-cyclohexanedione monoethylene ketal, 1093
ultrasound-assisted – of 1-dimethylamino-1-azadienes and electron-defficient dienophiles, 10047

Dienediynes
see Diynes

Dienes
2-alkyl substituted 1,3-dienes, synth from 2-(chloromethyl)-3-tosylpropene, 5829
2-azadienes derived from cysteine and serine methyl esters and aldehydes, Diels-Alder reactions of, 13709
3-carbomethoxy-2-aza-1,3-butadiene derivs, reactions with dienophiles, 12375
dienophilic reactivity of 2-methyl-, 2-phenyl-, and 2,3-trimethylene-1,4-benzodithiin-1,4-tetroxide, 7913
1,1-diphenyl-2-aza-1,3-butadiene derivs, substituent effects on 1,3-dipolar cycloadditions to, 3773
hexachlorocyclopentadiene in Diels-Alder reactions with chiral dienophiles L-menthyl acrylate and L-menthyl allyl ether, 2099
1,2,3,4,5,6-hexamethylbicyclo[2.2.0]hexa-2,5-diene (Dewar benzene), synth of polycyclic ozonides and peroxides derived from –, structures, 7625
1-(3-hydroxyalkyl) and 1-(4-hydroxyalkyl)-1,3-cycloalkadienes, oxidation of, stereocontrolled oxaspirocyclisation and total synth of theaspirone, 559
(+)-15-hydroxytrichothec-9,12-diene, sesquiterpene, synth, 1651
lithium dienediolates of carboxylic acids, addition to the lithium salts of carboxylic acids, synth of cyclohexenones and polycyclic ketones, 2571
2,7-octadienyl acetate and homologues, palladium(0)-catalysed cyclisation-carbonylation of, synth of bicyclo-[3.3.0] and [4.3.0] skeletons, 5705
radical cyclisations of – and enynes using phosphorus- and sulfur-centred radicals, 13533
2-substituted 1,3-butadiene derivs *via* palladium-catalysed cross-coupling reaction of 2,3-alkadienyl carbonates with organoboron, 7961
1-substituted 1-ethoxy dienes by reaction of 1,1-diethoxybut-2-ene with electrophiles in the presence of the mixed metal base LICKOR, 12463
endo-tricyclo[6.2.1.$0^{2,7}$]undeca-4,9-diene-3,6-dione, reactions with sulfur(II)- and

iodine(III)-containing electrophiles, 9933
endo-5-vinyl-2-norbornene, palladium-copper mediated cyclisation of -, synth of substituted brendanes and subsequent oxidation to the quinane system, 539
see also Allenes

Dienones
cyclooctadienones and δ-valerolactones from 3,3-dimethyl-7-methylenecycloocta-1,5-dione, 7461
melodienone and 7-hydroxy-6-hydromelodienone, antitumour heptenes from *Melodorum fruticosum*, synth, 10491
2-oxo-1,3-bis(ethoxycarbonyl)-2*H*-cyclopenta[*a*]acenaphthylene, reaction with non-conjugated dienes, cycloaddition reactivity of the decarbonylated cycloadducts, 13395
tricyclodecadienone epoxides, nucleophilic additions to, and Payne rearrangement of resulting αβ-epoxycyclopentanols, 3473

Dihydroxylation, *see* Hydroxylation

Dimerisation
biomimetic oxidative − of korupensamine A, naphthylisoquinoline alkaloid, synth of michellamines A-C, C_2-symmetric antiviral, 9643
diastereoselective − of aldonolactones by tris(dimethylamido)sulfonium difluorotrimethylsilicate mediated reaction with dialkyl substituted trimethylsilyl ketene acetals, 11885
dimerisation reactions of bicyclic α-hydroxy ketones, 12903
of 1- and 7-methylpentacyclo-[5.4.0.0^{2,6}.0^{3,10}.0^{5,9}]undecane-8-one, synth of $C_{24}H_{28}$ cage-functionalised alkenes, 1687
radical anion − in electrochemical reductive coupling of polyhalogenonitrobenzenes, mechanistic studies, 6913
of α-thiocyanato-β-dicarbonyl compds to 4,5-disubstituted-2-amino- and 2-acetamido-thiazoles, 7253

Dimers
of dihydroxyacetone; solution and crystal structure of stereoisomers of 2,5-diethoxy-1,4-dioxane-2,5-dimethanol, 10055
monomer-dimer equilibrium in lithium and sodium *gem*-difluoro allyl and methyl systems, *ab initio* theoretical study, 8073

Diols
acyclic 1,6-diols, intramolecular 1,6-hydride transfer in reaction with 85% phosphoric acid, synth of ketones, mechanism, 7307
by pinacol coupling of aliphatic aldehydes promoted by niobium(III) reagent, 2841
by uncatalysed methanolysis of furyl-2-oxirane, 5555
cyclic and acyclic β-keto ester acetals with C_2-symmetric cycloalkane-1,2-dioxy moiety, asymmetric alkylation of, synth of enol ethers with a chiral quaternary carbon, 3315
diastereoisomeric 1-(2-furyl)-2-aminobutane-1,3-diols, synth of *N*-benzenesulfonyl-*N,O*-isopropylidene derivs of, absolute configuration, 7611
12,13-dimethyl-2,7-dioxa-5,10-diaza-tricycle[4,4,4,0^{1,6}]*trans*-tetradecan-12,13-diol from reaction of 2,3-butanedione with ethanolamine, 9951
2,7-dimethyltricyclo[4.3.1.1^{3,8}]undecane-*syn*-2, *syn*-7-diol as a host for volatile and odorous guest molecules, 8749
1,2-diols, transformation of − over perfluorinated resinsulfonic acids (Nafion-H), 8195
4aβ-methyl-1,2,3,4,4a,5,6,7,8,8aα-decahydronaphthalene-1,7β-diol, synth from 8-methyl-*trans,trans*-cyclodeca-3,7-dien-1β-ol using *Cichorium intybus*, 3169
(1*R*,2*S*)-1-phenyl-2-methylpropane-1,3-diol by stereoselective aldol reaction of enolates derived from 1,3-diacyl-imidazolidine-2-thiones and 1,3-diacylimidazolidin-2-ones, 6621
(2*S*,3*R*) 5-phenylpent-4-en-2,3-diol derivs, asymmetric dihydroxylation of, 5021
and 1,2-quinones, addition reactions with cyclic chlorophosphites and arsenites, synth of phosphocin oxides, 6989
1,2,3-trihydroxy-4*E*-octadecene, synth as key intermediates for the synth of sphingosines, 10727
unsaturated 1,5-diols by reaction of 1,3-dichloropropene with excess lithium powder, 13269

Diols and Triols
see also Glycerol, Shikimic acid and analogs

Diones
8-alkyl-3-(1-phenylethyl)-7-oxa-1,3-diazabicyclo-[3.2.1]-octane-4,6-diones, synth and stereochemical behaviour directed to prep of α-substituted β-amino acids, 2955
4-aryl-2,2,6,6-tetramethyl-heptane-3,5-diones, conformational analysis by dipole moment determinations and molecular mechanics calculations, 11213
1*H*-benz[*g*]indole-4,5-diones by (3+2) photoaddition of 4-amino-1,2-naphthoquinones with alkenes, 8293
1,4-benzodiazepin-2,5-diones, synth by cyclisation of dipeptides derived from Boc anthranilic acid and α-amino acid methyl esters or by reaction of *N*-carboxy α-amino acid anhydrides with Boc anthranilic acid, 9051
2,3-butanedione, reaction with ethanolamine, synth of oxazines and tricyclic products, 9951
1,4-cyclohexanedione monoethylene ketal as starting material for synth of the A, B, C and D ring fragment of diterpene stemodin, 1093
11*H*-4b,10b-dihydro[1]benzopyrano[4,3-*c*]-isoquinoline-6,11(5*H*)-diones from homophthalic anhydride and *N*-(2-hydroxyarylidene)alkylamines, 9399
3,3-dimethyl-7-methylenecycloocta-1,5-dione, synth by De Mayo reaction of dimedone with allene, building block for the preparation of substituted cyclooctadienones and δ-valerolactones, 7461
furo[2,3-*f*]quinoline-4,5-diones from the reactions of 2-ethoxybut-2-enal *N,N*-dimethylhydrazone with quinoline-5,8-diones or benzo[1,2-*b*]furan-4,5-diones, 8457
1,2,3,4,5,6-hexahydro-3-benzazocine-4,6-dione and 2-substituted-2,5,6,7-tetrahydro-4-benzazonine-1,3-(4*H*)-dione, synth from substituted alkylthio octems and nonems, 9167
2,5-hexanedione and 2,6-heptanedione, reductive amination with hydride reagents, diastereoselective synth of 2,5-dimethylpyrrolidines and 2,6-dimethylpiperidines, 4709
hydroxy-substituted 5-cyano-5*H*-benzo[*b*]-carbazole-6,11-diones, intermediates towards kinamycin antibiotics, synth based on palladium-promoted oxidative coupling, 10893
Z,Z-2-octadec-9,12-dienoyl-4-hydroxycyclohexane-1,3-dione, kairomone and defensive compds of some insects, 6377
octahydro-7-[3-oxocyclobutylidene]-1,6:3,4-dimethanocyclobuta[1,2:3,4]dicyclopentene-2,5-dione, synth as a precursor to spherical hydrocarbon *p*-[$4^2.5^8$]decahedrane, 4949
2- and 4-oxo-1*H*-1-azaanthracene-9,10-diones, synth from 2-amino-1,4-naphthoquinone, 12941
pentacyclo[5.4.0.0^{2,6}.0^{3,10}.0^{5,9}]undecane-8,11-dione, conversion to lactam derivs, influence of reaction conditions, 10783
2,5,8(1*H*)-quinolinetriones, regioselectivity of the Diels-Alder reactions of, 7923
6-substituted 4,8-diaza-3,3,9,9-tetramethylundeca-2,10-dione dioximes (propylene amine oximes, PnAOs), synth as ligands for ^{99m}Tc complexes used in struct-ure distribution relationship studies, 8617
thiochroman-3,4-diones, synth and reactivity of, 7865
endo-tricyclo[6.2.1.0^{2,7}]undeca-4,9-diene-3,6-dione, reactions with sulfur(II)- and iodine(III)-containing electrophiles, 9933
1-(1,2,2-trimethylcyclopent-1-yl)-pent-2-en-1,4-dione from aminium salt catalysed rearrangement of α-pinene and β-ionone oxides, 9097

Dioxanes
2,5-diethoxy-1,4-dioxane-2,5-dimethanol, solution and crystal structure of stereoisomers of, 10055
(4*S*)-2-methyl-4-(4-carbomethoxybutyl)-1,3-dioxane by bovine liver acetone powder (BLAP) catalysed hydrolysis of 8-(tetrahydropyran-2-yloxy)-3-acetoxy-1-octene, 4137

Dioxepenes
2-methyl-1,3-dioxep-4-ene, reaction with secondary halogen magnesioamides, synth of 4-aminobut-2-enols and 2-aminobut-3-enols, 12953

Dioxetanes
1,2-dioxetane decomposition products from the oxidation of 3-phenyl-2-methylbenzofuran epoxide by dimethyldioxirane and oxodiperoxomolybdenum complex,

8393
Dioxiranes
3,3-dimethyl-1,2-dioxirane and ozone, reaction with substituted 2-thiouracils and pyrimidine-2-thione, synth of desulfurised products, 3259
dimethyldioxirane oxidation of (*Z*)-1-thioaurones, (*E*)-3-arylidene-1-thiochroman-4-ones and (*E*)-3-arylidene-1-thioflavan-4-ones, synth of sulfoxides and/or sulfones, 13113
dimethyldioxirane for the oxidative debenzylation of substituted benzyl ethers, 9983
dimethyldioxirane and oxodiperoxomolybdenum complex for oxidation of 3-phenyl-2-methylbenzofuran epoxide, generation of 1,2-dioxetane decomposition products, 8393
Dioxolanes
1,3-dioxolanes from baker's yeast fermentation of D-mannose, D-glucose and D-fructose, 857
ethyl 3-[(*S*)-2,2-dimethyl-1,3-dioxolan-4-yl]-propenoate, 1,4-addition of organocopper reagents to, 13173
α,α,α',α'-tetraaryl-2-mono- and -2,2-disubstituted-1,3-dioxolan-4,5-dimethanol ates (TADDOLates) of titanium(IV) as catalysts for addition of diethyl and bis(3-buten-1-yl)zinc to aldehydes, 4363
Dithianes
carbanions of dithiane monosulfone and dithiane monosulfonium salt, reaction with nitroarenes by oxidative or vicarious nucleophilic substitution of hydrogen, 4913
2,3-disubstituted 1,4-dithianes, conformational analysis by NMR spectroscopy and MMX calculations, 10107
2-(1,3-dithian-2-yl)indole, application to synth of the ABED ring system of *Strychnos* alkaloids, 6585
2-lithio-1,3-dithiane and 2-triorganosilyl-, 2-t-butyl- and 2-phenyl-2-lithiodithianes, solution ion pair structure by NMR, 5869
Dithiazoles
4,5-dichloro-1,2,3-dithiazolium chloride (Appel's Salt), reactions with *N*-nucleophiles, synth of imines containing the 1,2,3-dithiazole ring, 10037
Dithioles
cyclic sulfate ester of dimethyl L-tartrate and 2-thioxo-1,3-dithiole-4,5-dithiolate; short intermolecular S...S contacts in the reaction product, 11205
Dithiols
1,1'-binaphthalene-2,2'-dithiol by polymorphism and thermorearrangement of 2,2'-bis-*O*-(*N*,*N*-dimethylthiocarbamato)--1,1'-binaphthalene, 3463, 3463
Diynes
calicheamicin, antitumour antibiotic, features of DNA recognition for oriented binding and cleavage by calicheamicin, 1361
calicheamicin, antitumour antibiotic, probing the basis for the binding specificity of calicheamicin $\gamma 1^I$, molecular dynamics study, 1379
calicheamicin, enediyne containing antitumour antibiotic, circular dichroism studies of calicheamicin-DNA interaction, 1341
calicheamicin, enediyne containing antitumour antibiotic, NMR characterization of - bound to DNA, 1351
calicheamicin $\gamma 1^I$ and esperamicin-A1, synth of bicyclic core structure using [2,3]-Wittig rearrangement, 1469
dynemicin A; synth of an anthraquinone intermediate for –; unusual formation of spiro-oxindole ring, 11143
dynemicin A, antitumour antibiotic with a 10-membered cyclic enediyne moiety, synth of a cyclic enediyne model compd of, 1449
dynemicin A, cyclic enediyne antibiotic from *Micromonospora chersina*, synthetic studies involving quinoline derivs as intermediates, 5621
enediyne antibiotics, recent progress in - (Symposia-in-print), 1311
(*E*) and (*Z*)-enediynes by palladium-catalysed reaction of (*E*) and (*Z*)-dichloroethenes with 1-alkynes, 5335
enetetrayne containing compds, synth and chemistry; Bergman cycloaromatization, 1503
esperamicin, calicheamicin, diynemicin and neocarzinostatin, enediyne antitumour agents, use of $\eta^2Co_2(CO)_6$ acetylene complexes as intermediates in

synth of-, 1397
esperamicin and calicheamicin, synth of the bicyclo[7.3.1]enediyne core by a non cobalt mediated route, 1519
esperamicinone, aglycone of esperamicin A_1 enediyne antitumour antibiotic, synth based on asymmetric epoxidation of a quinone monoketal, 11391
high temperature radical cyclisation anomolies in the tandem enediyne-bis-radical cyclisation, 4635
neocarzinostatin, enediyne antitumour antibiotic, synth and chem of a functional analogue of - chromophore, 1419
neocarzinostatin (NCS), antitumour antibiotic, apoprotein-assisted cyclisation of neocarzinostatin chromophore, 1311
neocarzinostatin (NCS), antitumour antibiotic, synth and binding of simple neocarzinostatin chromophore analogues to the apoprotein, 1327
oxabicyclo[7.2.1]enediyne containing an *ortho*-methoxybenzyl group at the anomeric position, synth from methyl-2,3-anhydro-α-D-lyxofuranoside, 1435

Dreiding-Schmidt reaction
of deoxy uloside or 2,3-*O*-isopropylidene-D-erythronolactone, synth of spiro-anellated carbohydrate-derived α-methylene-γ-butyrolactones, 1111

Drugs
analogues of immunosuppressant FK506, total synth, 809
angiotensin II antagonist, report on drug discovery programme, 13049
anxiolytic drug ABECARNIL (isopropyl 6-benzyloxy-4-methoxymethyl-β-carboline-3-carboxylate, detection and characterisation of polymorphic modifications of, 13125
artemisinin, peroxide sesquiterpene effective against malaria, synth and antimalarial activity of tricyclic analogues of artemisinin, 957
2-arylpropionic acids, non-steroidal anti inflammatory drugs, synth by photo-induced arylation of β-dicarbonyl compds by arylazosulfides, 8117
[1,4'-bipiperidine]-4'-carboxamide, a common pharmacophoric group, synth *via* chloroenamines, 3123
cardiac drug (−)-denopamine, (−)-tembamide, (−)-aegeline and bronchodilator salbutamol, synth from *p*-methoxy or *p*-allyloxybenzaldehyde involving hydrocyanation of the aldehydes, 13739
diltiazem, anti-hypertensive agent, synth by enantioselective catalytic epoxidation of cinnamate esters, 4323
(−)-eburnamonine, tetracyclic indole alkaloid antihypertensive drug, formal synth by [3,3]-sigmatropic rearrangement of β-alkoxy acrylate derived from *rac*-3-ethyl-cyclohexenol, 9487
(*S*)-fenfluramine, anorectic agent, analogue of amphetamine, synth using Sharpless epoxidation of allylic alcohols, 171
5-hydroxytiagabine, a human metabolite of the GABA uptake inhibitor tiagabine for treatment of epilepsy, synth from 2-bromo-3-methylthiophene, 8699
(*S*)-(+)-ibuprofen and (*S*)-(+)-ketoprofen, non-steroidal anti-inflammatories, synth by photochemical rearrangement of α-chloro-propiophenones, 1243
inhibiting drug transport activity of P-glycoprotein in multidrug-resistant cells, isolation of taxuspines A-C, taxoids from Japanese yew *Taxus cuspidata*, 7401
ketoprufen, 2-(3-benzoylphenyl) propionic acid, non-steroidal anti-inflammatory drug, asymmetric synth by addition of pantolactone to methyl (3-benzoyl-phenyl) ketene, 6875
mefloquine, potent antimalarial agent, synth of quinuclidinyl analogue, (*rac-erythro*)-α-[(*SR*)-1-azabicyclo[2.2.2]oct-1-yl]-2,8-bis(trifluoromethyl)quinoline-4-methanol, 3327, 3327
(*S*)-(−)-pindolol and [3'-^{13}C]-(*R*)-(−)-pindolol, effective β-blockers, synth utilising a lanthanum-lithium-(*R*)-BINOL catalysed nitroaldol reaction, 12313
pravadoline, an indole deriv as nonacidic analogue of non-steroidal anti-inflammatory drugs, synth by cyclisation of 2-alkynyltrifluoroacetanilides with aryl halides and vinyl triflates, 437
2,7-substituted octahydro-2*H*-pyrido[1,2-*a*]-pyrazines, analogues of quinolizidine and piperazine drugs, synth, 1811
synth and reactions of a family of DNA-DNA affinity cross-linking agents with

DNA, 12065
Vigabatrin (γ-vinyl GABA, 4-amino-5-hexenoic acid), anticonvulsant drug for epilepsy, synth from (*R*)- or (*S*)-methionine, 5569
see also Alkaloids, Biologically active compds, Pharmacologically active compds

Eicosanoids
1,4,7,10,13,16,19-heptathiaheneicosane (21-S-7) and 1,4,7,10,13,16,19,22-octathiatetraeicosane (24-S-8), macrocyclic thiocrown ethers, synth, 2095
Electrochemical reactions
diester-calix[4]arenediquinone complexation and electrochemical recognition of group 1 and 2, ammonium and alkyl ammonium guest cations, 931
Electrochemistry
anodic oxidation of aryl propargyl and aryl allyl ethers at a platinum electrode, 6387
dipole moments of chloroalkenes and chlorocumulenes, identification of stereoisomers based on dielectric studies, 1707
electrochemical oxidation of dihydroindoloquinazoline and dihydroquinazoline derivs, 12773
electrochemical reduction of pristinamycin I^A and related streptogramins, synth of des-(3-hydroxypicolinoyl)-pristinamycin I^A, 6307
electrochemical reductive coupling of polyhalogenonitrobenzenes, mechanistic studies, example of radical anion dimerisation, 6913
investigation of reaction between sodium benzenesulfinate and *p*-halonitrobenzenes, 7889
Electrocyclic reactions
See Cyclization, Photochemistry
Electron spin resonance
carbon, detection of radical intermediates in the reactions of aryllithium compds with carbon monoxide, 4651
EPR and product studies of radical-chain addition of benzenethiol to allenic esters, 4001
ESR spectra of α-(hydroxymethyl)oxazolidin-3-oxyls, 12923
spectra, solid-state photochemistry of the mixed crystals between benzoquinones and polymethylbenzenes, 13617
study of photochemically induced oxidation of aniline by hydroperoxides, 9511
study of reduction of copper(II) complexes of bis(oxazolinyl)pyridine type ligands into copper(I) with diazoesters, 13725
Electron transfer
electron transfer induced aromatic nucleophilic substitution, mechanisms and reactivity, 10117
electron transfer oxidation of enol derivs of 2,3-dihydrobenzopyran-4-ones, 7635
electron transfer photooxygenation of 1,1- and 1,2-diarylethylenes sensitised by 2,4,6-triphenylpyrylium tetrafluoroborate, involvement of oxirane intermediates, 8773
PET promoted cyclisation of 1-[*N*-alkyl-*N*-(trimethylsilyl)methyl]amines tethered to proximate olefin, synth of pyrrolidines and piperidines, 8185
PET, studies on cyclobutyl bond cleavage by adjacent ketyl radical generated under PET conditions, 3835, 3843
pyropheophytin-anthraquinone linked molecules, synth as models for the study of photoinduced electron transfer, 4723
in the reactions of aryllithium compds with carbon monoxide, 4651
single electron transfer-hydrogen atom abstraction in treatment of α,α-dibromomethyl ketones with sodium thiolates, synth of α-monosulfenylated ketones, 12349
sodium naphthalenide, single-electron transfer (SET) reagent, reaction with quinoline, 4-quinazolinone–isoquinoline and *N*-methyloxindole, synth of dimeric and trimeric products, 9079
Electronic effects
on photochemistry of *N*-phthaloyl derivs of hydroxy substituted amino acids, 701
in reduction of *N*-acyl-enamine derivs with a NADH model in the pyrrolo-[2,3-*b*]pyridine series, 13135
substituent field effects on regiochemistry of reaction of 4-methyl-1,2,4-triazolinedione with allylic ethers and

sulfides, 8569
Electronic spectra
absorbance, evidence for direct attack of phenylalanine by flavonoxy and $HO^{\cdot}$ radicals, 5287
absorption, azobenzene and spirobenzopyran, photosensitive artificial membranes based on azobenzene and spirobenzopyran derivs, 4039
absorption and fluorescence, thieno[3,4-*d*]borepin and thieno[2,3-*d*]borepin, 6495
absorption, hydroxylation of aromatics in a flavin-initiated chain reaction, 6759
absorption, selective nitration *versus* oxidative dealkylation of hydroquinone ethers with nitrogen dioxide, 6727
absorption spectra as evidence for a common selenolate intermediate in the glutathione peroxidase-like catalysis of α-(phenylselenyl)ketones and diphenyl diselenide, 2929
in photochemical reactions of 9,10-anthracenedicarbonitrile and 1,4-naphthalenedicarbonitrile in acetonitrile in the presence of bases, 2115
UV, photoactivatable (*Z*)-18-[4-[3(trifluoromethyl)diazirinyl]phenyl]-9-octadecenoic acid, synth for protein kinase labelling, 3785
UV, dimethoxy[n.2]metacyclophanes (n=2-6), 12159
UV, (*E*) and (*Z*)-iodoalkylidene lactones, 2161
UV vis, bilirubin analogues with *N,N*-methylene bridges, 9919
UV-vis, 1-aryl-3,3-disubstituted triazines synthesised on an ion-exchange resin support, 9107
UV-vis, study of reduction of copper(II) complexes of bis(oxazolinyl)pyridine type ligands into copper(I) with diazoesters, 13725
UV/vis spectra for determination of association constants of diester-calix[4]arene-diquinone with various cations, 931
Elimination reactions
cycloaddition-elimination reactions with substituted acetylenic compds, synth of 3-functionalised 5-chloro-6-methyl-2*H*-1,4-oxazin-2-ones and pyridines, 5211
Enals
4-hydroxynon-2-enal, a cytotoxic lipid peroxidation product, and its C_5-analogue 4-hydroxypent-2-enal, synth and stereoanalysis, 10245
Enamides
1,2-diarylethylamines and ethylenenamides, synth and Bischler-Napieralski reaction of- to yield 3-arylisoquinolium salts and subsequent transformation into 12-methyl substituted benzo[*c*]-phenanthridines, 2207
Enamines
N-acyl-enamine derivs, reduction with a NADH model in the pyrrolo[2,3-*b*]-pyridine series, mechanism, 13135
N-alkyl-*N*-allyl enamines, stereochemical consequences of the Lewis acid-promoted 3-aza-Cope rearrangement, 4105
chiral lithioenamines derived from α-alkyl β-keto esters, asymmetric Michael reaction of, 13081
chloroenamines in aminocyclopropane synth, 715, 731
chloroenamines in aminocyclopropane synth, synth of conformationally rigid analogues of [1,4'-bipiperidine]-4'-carboxamide - a common pharmacophoric group, 3123
α-cyclisation of − with dimethyl acetylenedicarboxylate, synth of pyrrolines, pyrrolizidines and their ring homologues, 7075
β-enamino esters *via* C-C coupling reactions of lithium enolates of protected glycine esters and isothiocyanates, 11509
enaminoketones prepared from halogeno anilines and carbonyl derivs, $NaNH_2$-t-BuONa promoted arynic cyclisation of, synth of indoles, 11903
β-enaminonitriles, synth from reaction of β-enaminonitriles with paraformaldehyde and dimethylamine, reactivity of, 1877
hexacyclic enamine, synth as intermediate for conversion into Strychnos alkaloids, 2681
on the nature of the electronic interaction between conjugated − and electrophiles, 5387
γ'- and ε-nitro-β-enaminoketones by reaction of dianions of acyclic β-(monoalkylamino)-αβ-unsaturated ketones with nitroalkenes, subsequent conversion to dihydropyrroles, 9831
pyrrolidine enamines of cyclic and acyclic

3,4-dioxobutanoic acid derivs, reactions with dimethyl acetylenedicarboxylate, atropoisomerism, 13857
reduction of-, synth of β-aminoketones, 2255
N-substituted enamines, reaction with phenylglyoxal or glyoxal, synth of *N*-substituted pyrrolinones, 7849

Enantiocontrol
electronic control of enantioselectivity in the palladium-catalysed asymmetric allylic substitution of *trans* 4-t-butyl-1-vinylcyclohexyl benzoates, 465

Enantioselection
addition of primary alkyl Grignard reagents to carbocyclic and heterocyclic arylketones in the presence of magnesium TADDOLate, 6117
enantio- and diastereoselective titanium-TADDOLate catalysed addition of diethyl and bis(3-buten-1-yl)zinc to aldehydes, 4363
and regioselective synth of homoallylic alcohols by reaction of allylic sulfides, bearing two different leaving groups, with organocopper reagents by selective substitution of the heterocyclic moiety, 7283
Ti-TADDOLate catalysed enantioselective addition of alkyl- and aryl-titanium derivs to aldehydes, 7473

Ene reactions
of allylic sulfides and ethers, comparison of substituent field effects on the regiochemistry, 8569
of diethylazodicarboxylate and triazolidinone, solvent effects, 1821
isomerisation of 1-methylene-2-methyl-2-(2-oxopropyl)-cyclohexanes to 2-methylene-1-methyl-1-(2-oxopropyl)-cyclohexanes by ene and retro-ene reaction, 8765
of 5-(prop-2-enyl)-2ξ-hydroxy-5α-cholestan-3-one, 13461
thermal - of 4-(2-alkenylamino)-3-formyl-2(2*H*)-chromenones, synth of 5-hydroxychromen[3,4-*b*]azepines and intramolecular attack to give oxazinone derivs, 1063
of α,ε-unsaturated aldehydes using bulky organoaluminium reagents, elucidation of the transition state, 6505

Enediynes
see Diynes

Enol ethers
polyenol ethers, solvolysis of, dependence on the nature of the alkoxy moiety, 13207

Enolates
activated imines of enolates from chiral *N*-acyloxazolidinones, addition to, 12755
boron enolates of homochiral C_2-symmetric 1,3-diacylimidazolidin-2-ones prepared from tartaric acid, use in aldol and alkylation reactions, 7521
computer-assisted design of chiral boron enolates; role of ate complexes in determining aldol stereoselectivity, 1227
derived from 1,3-diacyl-imidazolidine-2-thiones and 1,3-diacylimidazolidin-2-ones, aldol reactions of, 6621
enolates of dispiroketals (1,18,13,16-tetraoxadispiro[5.0.5.4]-hexadecan-14-ones) from reaction of α-hydroxy acids with bis-dihydropyrans, subsequent reaction with electrophiles, 7157
ketone enolates, electrophilic α-*p*-tolylhydrazonylation with t-butyl *p*-tolylazo sulfide, synth of 2-oxohydrazones, 11239
lithium enolates of protected glycine esters, C-C coupling reactions with isothiocyanates, synth of β-enamino esters, 11509
magnesium – by ligand exchange reaction of the sulfinyl group of α-halo-α-sulfinyl carboxylic acid, esters and aldehydes, subsequent conversion to α-halocarboxylic acid derivs, 4957
masked lithium homoenolates by reductive cleavage of allylic ketals by an arene-catalysed lithiation, 3437, 3437
Michael Initiated Ring Closure reaction (MIRC), asymmetric induction in, 5591
on the nature of the electronic interaction between conjugated – and electrophiles, 5387
tin and titanium – of 2-pyridylthioesters, condensation of – with imines, synth of β-lactams, 5821
titanium enolates of 2-pyridyl thioesters, condensation with imines bearing a chiral auxiliary, synth of β-lactams, 9471
titanium enolates and "ate" complexes of *N,N*-disubstituted amides and thioamides

in the Michael reaction, 7193
titanium enolates, β-lactams by condensation of - of 2-pyridylthioesters with imines; influence of the imine structure on the *trans/cis* stereoselectivity, 2939
trapping of ω-acyl-substituted acylpalladium derivs with C- or O-enolates in carbonylative cyclisation, 425

Enols
arylenols by irradiation of α-tetrasubstituted arylketones, 2849
enol derivs of 2,3-dihydrobenzopyran-4-ones, electron transfer oxidation of–, 7635
enol ethers with a chiral quaternary carbon by asymmetric alkylation of cyclic and acyclic β-keto ester acetals with C_2-symmetric cycloalkane-1,2-dioxy moiety, 3315
see also Enolates

Enones
1-acetyl-3α,6-dimethyl-hexahydroazulene, synth as intermediate for the prep of terpenoids with bicycle[5.3.0]decane system, 12655
enantioselective conjugate addition of *n*-butyl to – using scalemic tetraamines (DIMAPP ligands) as chiral cuprate ligands, 4455
enantioselective copper-catalysed 1,4-additions of Grignard reagents to – using mercaptoaryl-oxazolines as ligands, 4467
see also Chalcones

Enynes
radical cyclisations of – and dienes using phosphorus- and sulfur-centred radicals, 13533

Enzyme inhibitors
N-, *C*- and *S*-mannopyranosyl derivs as potential inhibitors of jackbean α-mannosidase, 6965
2-acetamido-1,2,4-trideoxy-1,4-imino-D-galactitol and -D-glucitol, synth as glycosidase inhibitors, 13299
allophenylnorstatine, β-amino-α-hydroxy acid found in kynostatin class of HIV-1 protease inhibitors, synth, 3975
4-amino-5-hexenoic acid, Vigabatrin, potent inhibitor of γ-aminobutyric acid transaminase, an anticonvulsant drug for epilepsy, synth from (*R*)- or (*S*)-methionine, 5569
aminoarabinose and aminoaltrose derivs, synth from 1,2-dihydropyridines as potential glycosidase inhibitors, 1135
6-amino-1,4,6-trideoxy-1,4-imino-D-mannitol dihydrochloride and 4-amino-1,4,6-trideoxy-1,6-imino-D-mannitol dihydrochloride as inhibitors of α-mannosidase, 1033
6-azabicyclo[3.2.0]hept-2-ene derivs as β-lactamase inhibitors, synth and biological evaluation, 12049
azasugars as inhibitors of glycosidases, synth of pyrano- and furano- sugar lactams from the corresponding sugar lactones, 4215
(+)- and (−)-calystegine B_2, polyhydroxylated nortropane derivs and inhibitors of β-glucosidase and α-galactosidase, total synth from D-glucose *via* Ferrier reaction, 10443
castanospermine, glycosidase inhibitors, synthetic functionalisation at C-6, synth of australine and analogues, 2131
(−)-compactin fungal metabolite and inhibitor of HMG-CoA reductase, synth of hexahydronaphthalene nucleus from ethyl-(1*R*,2*S*)-2-methyl-4-oxocyclohexanecarboxylate and 2-(3-nitropropyl)-1,3-dioxolane, 11743
conformationally restricted relatives of mevinic acids, synth as inhibitors of 3-hydroxy-3-methylglutaryl coenzyme A [HMGCoA reductase], 5147
2',3'-deoxy-2'- or 3'-C_2-branched- or 2',3'-α-fused-isoxazolidine nucleosides as inhibitors of HIV-reverse transcriptase, 5279
[L-3-deoxymimosine[4]]-angiotensin I, a protein-tyrosine kinase (PTK) inhibitor, synth from t-Boc-L-asparagine, 9873
2,4-diaminopyrido[2,3-*d*]pyridines as potential inhibitors of dihydrofolate reductase, synth, 199
diastereomeric pair of phosphonopeptide inhibitors of the cyclic AMP-dependent protein kinase catalytic subunit, synth and separation, 1919
didemnilactones A and B and neodidemnilactone, fatty acid metabolites from tunicate *Didemnum moseleyi* (Herdman) as inhibitors of lipoxygenase,

7385
1,4-dideoxy-1,4-imino-hexitols as glycosidase inhibitors, 7513
S-(2,2-difluoro-3-oxohexadecyl)-coenzyme A and *S*-(3,3-difluoro-2-oxopentadecyl)-coenzyme A, synth and inhibitory activity against *N*-myristoyltransferase (NMT), 9847
2(*S*)-[1,1-dimethylethylsulfonylmethyl)-3-(1-naphthyl)-propionic acids as N-terminal components in peptidomimetic protease inhibitors BBP-OH, 4691
(2*R*,3*R*)-2,3-epoxysuccinyl-dipeptides as inhibitors of cysteine-proteases, synth by acylation of dipeptides and subsequent attempt at direct conversion to the corresponding epithiosuccinyl deriv, 8381
farnesyl chain modification of squalene synthase inhibitor benzylfarnesylamine, conversion to the terminal bis(trifluoromethyl)deriv, 3849
2-fluoro-11-hydroxy analogue of porphobilinogen, synth as inhibitor of porphobilinogen deaminase, 6181
isofagomine (3*R*,4*R*,5*R*)-3,4-dihydroxy-5-hydroxymethyl-piperidine, inhibitor of glycosidase, synth from 1,6:2,3-dianhydro-4-*O*-benzyl-β-D-mannopyranose, 13449
makaluvamines A-E, cytotoxic pyrroloiminoquinone alkaloids from marine sponge *Zyzza* cf. *marsailis* and *Histodermella* sp., inhibitory activity against topoisomerase II, 13593
manoalide, sesquiterpenoid phospholipase A_2 inhibitor from Pacific sponge *Luffariella variablis*, synth *via* heteroatom-assisted alkyne carbometalation, 8793
microginin, angiotensin-converting inhibitory peptide from blue-green alga *Microcystis aeruginosa*, total synth, 11303
moenomycin A, inhibitor of transglycosylase, methods for removal and oxidation of the lipid moiety, 5299
monodontamides A-F from the marine gastropod mollusc *Monodonta labio* (Linné), inhibitors of serine protease, 6805
pentathiepins and trithianes from two *Lissoclinum* sp. and a *Eudistoma* sp., inhibitors of protein kinase C, 12785
peyssonol A and B and hyatellaquinone, sesquiterpene hydroquinones from the alga *Peyssonnelia* sp. and *Hyatella intestinalis* sp., inhibitors of reverse transcriptase of HIV, 4179
phosphonomethyl-phenylalanine and phosphotyrosine containing cyclic peptides as inhibitors of protein tyrosine kinase/SH2 interactions, 2691
pseudomonic acid, antibiotic involving competitive inhibition of isoleucine t-RNA synthetase, modifications at C-12 to C-14, 10739
pseudostellarin A, a tyrosinase inhibitory cyclic pentapeptide from *Pseudostellaria heterophylla*, 12599
pseudostellarins A-C, cyclic peptides with tyrosinase and melanin production inhibitory activities from roots of *Pseudostellaria heterophylla*, isolation and structure elucidation, 6797
pseudostellarins D-F, tyrosinase inhibitory peptides from the roots of *Pseudostellaria heterophylla*, structures, 9975
sphingosines, inhibitor of protein kinase C, synth of 1,2,3-trihydroxy-4*E*-octadecene as key intermediates for the synth of sphingosines, 10727
structural analogues of antibiotic moenomycin A with a D-glucose-derived unit F as inhibitors of transglycosylase, 2029
3'-*C*-substituted-3'-nitromethyl-*ribo*-thymidines, synth as inhibitors of HIV-reverse transcriptase, 4167
tetrapeptide analogues based on 1-amino-cyclopropane carboxylic acid for inhibition of carboxypeptidase A, 9729
trifluoromethyl ketones as −, synth through lithium-iodine exchange reaction, 12673
validamine, a biologically active *pseudo*-aminosugar, synth from D-glucuronolactone as inhibitor of α-glucosidase, 9619

Enzymes and enzyme reactions

laccase as catalyst for synth of 3-substituted-1,2,4-triazolo(4,3-*b*)(4,1,2)benzothiadiazine-8-ones from 5-substituted-4-amino-3-mercapto-1,2,4-triazoles, 4019
baker's yeast reduction of α-hydroxy ketones and derivs, steric course, 10539
bastadins, alkaloids from marine sponges *Ianthella basta* and *Ianthella flabelliformis*, evaluation as inosine 5'-phos-

phate dehydrogenase (IMPDH), 7367
biocatalysis in organic solvents, aspects of, 8253
biological synth of chiral epoxides, 8895
bovine liver acetone powder (BLAP) catalysed hydrolysis of 8-(tetrahydropyran-2-yloxy)-3-acetoxy-1-octene, synth of (*S*)-matsutake alcohol, 4137
Candida antarctica lipase B for regioselective esterification of polyhydroxylated steroids, 13165
cholesterol esterase as catalyst for hydrolysis of the racemic diacyl deriv of (1,1'-binaphthalene)-2,2'-dithiol, resolution, 7109
dealkylation of ammonium salts by thiolate anions, a model of the cobalamin-independent methionine synthase reaction, 7837
enzyme derived from *Phodococcus* sp. (Novo SP 409), use in opening of an (±)-epoxyester, synth of (2*R*,5*R*)- and (2*S*,5*R*)-pityol, pheromone of bark beetle, 8661
expression in *Escherichia coli* of a clavaminic acid synthase isozyme, a trifunctional oxygenase involved in clavulanic acid biosynth, 8737
β-galactosidase from *Aspergillus oryzae* for galactosylation, synth of di- and trisaccharides, 10407
halohydrin hydrogen-halide-lyase (H-lyase) from *Escherichia coli* as catalyst for the synth of (*R*)-γ-chloro-β-hydroxybutyronitrile from epichlorohydrin or 1,3-dichloro-2-propanol, 11821
lipase from *Candida antarctica* as catalyst for aminolysis and ammonolysis of β-ketoesters, synth of optically active β-ketoamides, 6935
lipase, solvent effects on lipase-catalysed transesterifications of *cis*- and *trans*-4-methylcyclohexanols, 4681
lipase-catalysed transesterification of *rac*-3-ethyl-cyclohexenol, synth of β-alkoxy acrylate and subsequent rearrangement to (−)-eburnamonine alkaloid, 9487
lipases from *Candida antarctica* and *Pseudomonas cepacia* for aminoacylation of 2'-deoxy- and ribo-nucleosides with oxime aminoacyl esters, 6927
methionine synthase; alkyl transfer from quaternary ammonium salts to cobalt(I), model for the cobalamin-dependent methionine synthase reaction, 8863
Mucor miehei lipase catalysed transesterifications on aromatic and heteroaromatic substrates, 6999
N-myristoyltransferase (NMT), synth of *S*-(2,2-difluoro-3-oxohexadecyl)-coenzyme A and *S*-(3,3-difluoro-2-oxopentadecyl)-coenzyme A as inhibitors of–, 9847
pig liver acetone powder as biocatalyst for enantioselective synth of *trans*-2-alkoxycyclohexan-1-ols, 10521
protein kinase labelling by photoactivatable (*Z*)-18-[4-[3(trifluoromethyl)diazirinyl]phenyl]-9-octadecenoic acid, 3785
Pseudomonas fluorescens lipase for selective enzymatic transformations of itaconic acid derivs, access to potentially useful building blocks, 3251
Pseudomonas fluorescens lipase for stereoselective transacetylation in organic solvents of *sec*-alcohols derived from macrocyclic lactones of resorcylic acid, 13753
resting cells of *Clostridium formicoaceticum* for preparation of (*S*)-2-substituted succinates and hydroxysuccinic acid derivs from fumarates and from 2-butene-1,4-dioic acids, 13631, 13641
Rhizopus arrhizus lipase as catalyst for deacylation of glyceroglycolipids to lysoglyceroglycolipids, 1993
semipurified lipase of *Candida cylindracea* in the enantioselective hydrolysis of (*R,S*) 2-aryl propionates, 10749
transketolase from spinach leaves in enzymatic synth of 6-deoxy-D-fructose and 6-deoxy-L-sorbose from racemic 2,3-dihydroxybutyraldehyde, 8677

Epimerisation
of alkynyl sugars through cobalt complexes, synth of pyran subunits of marine *trans*-fused polyether toxins, 5633
of tilivalline, pyrrolo[2,1-*c*][1,4]benzodiazepine from *Klebsiella pneumoniae* var. oxytoca,, 9781

Epoxidation
of allylic alcohols, synth of (*R*)- and (*S*)-1-(*m*-trifluoromethylphenyl)propan-2-ols, precursors of (*S*)-fenfluramine, 171

of *cis*-olefins using a (salen)manganese-(III) complex as catalyst, 11827
enantioselective catalytic – of cinnamate esters, steric effects, 4323
of olefins using dimeric manganese(III)-tetraarylporphyrins as catalysts, 9025
of *cis*-olefins using (salen)manganese(III) complex bearing a *p*-(t-butyl)phenyl or a binaphthyl group as catalyst, 4311
personal review of K. Barry Sharpless, 4235

Epoxides
acid-promoted epoxide ring opening of 6-*exo*-cyano-3,8-dioxabicyclo[3.2.1.$0^{2,4}$]oct-6-*endo*-yl esters, selectivity between pinacolic rearrangement and intramolecular displacement, 2469
chemical and biological synth of chiral epoxides, 8895
derived from asymmetrized 2-alkenyl-1,3-propanediols, regiocontrol in reductive ring opening of-, 2219
trans-3,4,5,6-diepoxycyclohex-1-ene (*anti*-benzene dioxide), reaction with various nucleophiles, 3709
2,3-disubstituted benzofuran epoxides prepared by dimethyldioxirane oxidation, rearrangement to benzofuranones, 11441
enantioselective synthesis of – by epoxidation of *cis*-olefins using (salen)manganese(III) complex bearing a *p*-(t-butyl)-phenyl or a binaphthyl group as catalyst, 4311
R-(−)-epichlorohydrin, propargylation of, key step in route to A-ring synthon for 1α,25-dihydroxyvitamin D_3, 13369
3,4-epoxy-1,6-dioxaspiro[4,5]dec-7-enes by [4+2]-cycloadditions of 3,4-epoxy-2-methyleneoxolanes with oxadienes, 8035
epoxy-endoperoxide from reaction of 2,3-dimethylene-1,4-methano-1,2,3,4-tetrahyd ronaphthalene with singlet oxygen, 5753
epoxy-pyronene from δ-pyronene using metachloroperbenzoic acid, use in synth of cyclocitrals, ionones and terpenes, 3381, 3381
trans-2,3-epoxybutane, ring opening by higher order cuprate, synth of *erythro*-3,7-dimethylpentadecan-2-yl acetate, pheromone of sawflies, 5225
19,20-epoxycytochalasin Q and deacetyl analogue, cytotoxic cytochalasins from the fungus *Xylaria obovata*, structures, 5615
(±)-epoxyester, opening by using an enzyme derived from *Phodococcus* sp. (Novo SP 409), synth of (2*R*,5*R*)- and (2*S*,5*R*)-pityol, pheromone of bark beetle, 8661
α,β-epoxysulfoxides, ring-opening of – in synth of α-thiosubstituted carbonyl compds, deoxygenation *versus* dehydration and an overall 1,2-keto transposition, 5413
3,4-epoxytetrahydropyran, ring opening reactions of, 1261
furyl-2-oxirane, mechanistic study of uncatalysed alcoholysis of–, 5555
glucal epoxides by cyclisation of glucal halohydrins, effect of the halide on epoxide formation, 6783
homochiral *cis* epoxides derived from tris-(hydroxymethyl)methane equivalents, regiocontrol in ring opening of, synth of branched triols, 12245
homochiral epoxybenzocyclooctenamines, benzomorphan analogous CNS agents, prep from enol ester, 8003
cis- and *trans*-oxides derived from 3-benzyloxycyclohexene and 2-benzyloxy-5,6-dihydro-2*H*-pyran, regiochemical control of the ring opening of –, 12999
3-phenyl-2-methylbenzofuran epoxide, oxidation of – by dimethyldioxirane and oxodiperoxomolybdenum complex, generation of 1,2-dioxetane decomposition products, 8393
erythro N-protected α-amino epoxides and peptidyl epoxides, synth from amino acids, 6333
tricyclodecadienone epoxides, nucleophilic additions to, and Payne rearrangement of resulting αβ-epoxycyclopentanols, 3473, 3473
trisubstituted –, Lewis acid-promoted selective rearrangement to aldehydes or ketones, 3663
see also Oxiranes

Esterification
lipase-catalysed transesterifications of *cis*- and *trans*-4-methylcyclohexanols, solvent effects, 4681
Mucor miehei lipase catalysed *trans* – on esters of aromatic and heteroaromatic

carboxylic acids, 6999
regioselective – of polyhydroxylated steroids by *Candida antarctica* lipase B, 13165
trans– of alkyl carbamate to aryl carbamate, effect of varying the alkyl group, 10367

Esters
alkyl halide vs. ester formation in reaction between acyl halides and alcohols, 217
allylic esters, DABCO catalysed rearrangement of –, mechanistic and synthetic aspects, 12001
allylic and tertiary benzylic ethers and esters, catalytic cleavage of – with cerium(IV), 7299
bicyclic tetronic, tetramic and thiotetronic esters, Michael and substitution reactions of, 8237
2-bromoesters from tertiary carbanions using 1,2-dibromoethane; bromination *versus* alkylation, 9825
trans 4-t-butyl-1-vinylcyclohexyl benzoates, electronic control of enantioselectivity in the palladium-catalysed asymmetric allylic substitution, 465
6-*exo*-cyano-3,8-dioxabicyclo[3.2.1.$0^{2,4}$]oct-6-*endo*-yl esters, selectivity between pinacolic rearrangement and intramolecular displacement in the acid-promoted epoxide ring opening of, 2469
diazo(trialkylsilyl)-acetates, transition metal-catalysed decomposition of, formation and trapping of carbonyl ylids, 7435
β-enamino esters *via* C-C coupling reactions of lithium enolates of protected glycine esters and isothiocyanates, 11509
1-halo-1-alkyl boronic esters, synth as precursors for novel thrombin inhibitors, 3803
heteroatom substituted esters, selective enolization to silyl ketene acetals and application of the method to the Ireland ester enolate Claisen rearrangement, 3099
4-(3-hydroxyphenyl)alkanoates, tandem reduction/intramolecular hydroxyalkylation of, synth of 1,8-dihydroxytetralins, 11945
(*R*)-MTPA esters of α-hydroxyphosphonates, absolute configuration by ^{31}P NMR spectroscopy, 10253
phosphodiester of 3β(7β-hydroxycholesterol) and of 5'(3'deoxy,3'azidothymidine), antivirals, synth by phosphorylation, 1173
phosphonodithioformates, reduction of –, synth of α-phosphonyl thiols and hemidithioacetals, 10277
pyrolysis of -, substituent effects by AM1 calculations, 161
2-substituted alkyl (*Z*)- and (*E*)-2-alkenoates and (*Z*)- and (*E*)-α-ylidene-γ-butyrolactones from cross-coupling between organostannanes and organic halides, 12029
tiglate esters, reaction with singlet oxygen, asymmetric synth of 3-hydroxyperoxy-2-methylidene butenoates, 8929
β,γ-unsaturated esters, conversion into butanolides by treatment with TMS-I, extension of reaction to α-alkylidene lactones, 13687

Ethers
alkyl aryl ethers, functionalisation of the alkoxy group of –; demethylation, alkylthiolation and reduction of 5-methoxyindoles, 13433
allylic sulfides and ethers, ene reactions of –, comparison of substituent field effects on the regiochemistry, 8569
allylic and tertiary benzylic ethers and esters, catalytic cleavage of – with cerium(IV), 7299
(α-benzotriazolylvinyl)ethers, benzotriazole-assisted β-lithiation of–, PM3 and MNDO calculations, 6005
bicyclic silyl enol ethers, Rubottom oxidation of –, synth of bicyclic α-hydroxy ketones, 12903
degree of intracluster etheration and reactivity of *sec*-butyllithium towards ethylene, 5933
diaryl ethers by Diels-Alder cycloadditions as intermediates in preparation of polycyclic compds, 3407, 3407
enol ethers with a chiral quaternary carbon by asymmetric alkylation of cyclic and acyclic β-keto ester acetals with C_2-symmetric cycloalkane-1,2-dioxy moiety, 3315, 3315
hydroquinone ethers, selective nitration *versus* oxidative dealkylation of – with

nitrogen dioxide, 6727
isomeric allyl and (*Z*)-propenyl ethers, relationship of ^{17}O and ^{13}C NMR spectra with their relative thermodynamic stabilities, 7293
lithiated diallyl ethers, influence of the geometry of the carbanionic moiety on the non-induced diastereoselectivity of [2,3]-Wittig rearrangement of–, 3687
polyenol ethers, solvolysis of, dependence on the nature of the alkoxy moiety, 13207
silyl enol ethers and allylic silanes, desilylative cross-coupling to γ,δ-unsaturated ketones *via* oxovanadium-induced chemoselective one-electron oxidation, 10207
substituted benzyl ethers, oxidative debenzylation of – using dimethyldioxirane, synth of alcohols, 9983
see also Oxygen heterocycles

Exchange reactions
bromine-lithium exchange of 3,3'-dibromostilbene with one equivalent of n-butyllithium, s-butyllithium or t-butyllithium, synth of 3-bromostilbene and stilbene, 5999
bromine/lithium and bromine/zinc exchange reactions of *gem*-dibromo compds, stereochemistry in lithium and zincate carbenoid formation, 7987
ligand – of the sulfinyl group of α-halo-α-sulfinyl carboxylic acid, esters and aldehydes, synth of magnesium enolates and conversion to α-halocarboxylic acid derivs, 4957
stannylpyrimidines in coupling and tin-lithium exchange reactions, 275

Ferrier reaction
mechanistic and stereochemical studies of – by using (*E*)-selectively deuterated methyl[6-^{2}H]-2,3,4-tri-*O*-benzyl-α-D-*xylo*-hex-5-enopyranoside, 4125

Ferrocenes
anils of benzoylferrocene, synth and mercuration of, 10467
ferrocenylheteroarenes, electrophilic substitutions on, 5765

Flavanoids and isoflavanoids
flavan-3-ols and 4-arylflavan-3-ols, absolute configurations *via* the Mosher method, 12477
flavan-3-ols, synth by Mitsunobu reaction of *p*-oxygenated benzylic alcohols, effect of *para*-substituent, 5469
flavanols, oxidation by potassium superoxide, synth of acids and aldehydes, mechanism, 9303

Flavins
flavin radicals, spontaneous formation and subsequent reactions of flavin radicals in the presence of phenylalanine and O_2 and/or H_2O_2, hydroxylation of aromatics, 6759
flavinoxy and HO^- radicals, evidence for direct attack of phenylalanine by flavin radical species, 5287

Flavones, flavanones
(*E*)-3-arylidene-1-thioflavan-4-ones, dimethyldioxirane oxidation of, 13113
flavonols by condensation of active methylene compds with arylaldehydes in water, 11499

Flavours and fragrances
nor-ambreinolide from (+)-*cis*-abienol, 6653, 6653
(–)-Ambrox, total synth from *S*-(+)-carvone *via* decalones, 10073, 10095, 10073, 10095
conjugated *cis*-caradienes, fragrances from 3-carene by Wittig reaction, 13181
(±)-karahana ether and karahanaenone, fragrant monoterpenes from Japanese hop *Shinshu-wase*, synth by selective cyclisation of 6,7-epoxygeranyl acetate, 13239
3,5,7,7-tetramethylcycloocta-2,4-dien-1-one, constituent of Kephalis, synth from 3,3-dimethyl-7-methylenecycloocta-1,5-dione, 7461, 7461

Fluorenes and fluorenones
fluorenes from condensation of 2,5-*trans*-2',5'-*trans*-5,5'-dimethylperhydro-2,2'-bipyrimidine with formaldehyde, synth and stereochemical assignment, 2497

Fluorescence
derivs of azadirachtin, the antifeedant from *Azadirachta indica*, containing fluorescent or immunogenic reporter groups, synth, 8871
fluorescent quantum yields of methano, ethano and 1,3-propano N_{10},N_{11}-bridged

dipyrrinones, 1955
spectra, (1*R*,2*R*)-2-(2-hydroxy-7-methoxy-5-methyl-1-naphthalenecarbonyloxy)-1-cyclopentanol, 1327
to study host-guest interactions of tetrapus host molecules with fluorinated tentacles with anionic termini, 10459
Fluorine and compds
1-alkoxy-2-fluoro-1-phenyl benzocycloalkanes by reactions of 1-phenylbenzocycloalkenes with cesium fluoroxysulfate in alcohols, stereochemistry and relative rates, 12235
2-alkoxy-2-fluoro-glycosyl fluorides, reaction with benzyl alcohol derivs, synth of isochromane or *O*-glycoside derivs, 9125
N,N-bis(alkoxycarbonyl) amino acid fluorides, synth and reactivity, 5309
(9-alkyl-9-fluorenyl)-methyllithium (or cesium) and 2,2-diphenyl-3,3-dimethylbutyllithium, rearrangements of, 5971
2-chloro-2-fluoroacetaldehyde, conformational analysis and calculated transition state structures of nucleophilic addition reactions, 11197
cyclisation of 2-alkynyltrifluoroacetanilides with aryl halides and vinyl triflates, synth of 2-substituted-3-acylindoles, 437
di-, tetra- and pentapeptide derivs of 5-fluorouracil, synth by addition of ethyl glyoxylate to *N*-(benzyloxycarbonyl)-amino acid amides, 3747
fluoride mediated reactions of lactones with silyl ketene acetals, 3333
fluorinated β-diketones, yeast reductions of − in synth of corresponding ketols, stereochemistry of, 11995
fluorinated organometallics in organic synth, 2993
fluorinated polyamine analogue, synth using the Mitsunobu reaction, 5579
fluorination of trialkylstannylindoles with cesium fluoroxysulfate, synth of inter-alia 2- and 3-fluoroindoles, 1899
2-fluoro-11-hydroxy analogue of porphobilinogen by direct fluorination of the pyrrole ring with xenon difluoride, inhibitor of porphobilinogen deaminase, 6181
2-fluorogeraniol and 2-fluorofarnesol using a fluoroisoprenylation sequence employing 2-fluoroalkenal derived azomethines as key intermediates, 7827
α-fluoroketones, synth based on palladium-catalysed decarboxylation reactions of allyl β-keto carboxylates, 487
2-fluoromethyl-2-hydroxymethyl-, 2-(dimethoxy)methyl-2-fluoromethyl- and 2-carboxy-2-fluoromethyl oxiranes, synth as building blocks, 13485
metalated fluoropyridines and fluoroquinolines as reactive intermediates, regioselective synth, 1129
monofluorocyclohexanols through radical cyclisation of *gem*-chlorofluoroheptenols, stereochemistry, 12361
monomer-dimer equilibrium in lithium and sodium *gem*-difluoro allyl and methyl systems, *ab initio* theoretical study, 8073
perfluoroacylation of alkynes using trifluoroacetic anhydride activated by $BF_3.SMe_2$ complex, synth of α,β-unsaturated sulfones with a trifluoroacyl group *via* sulfonium salts and sulfides, 12407
perfluoroacylation of cyclopropyl-containing alkenes, 775
tetrapus host molecules with fluorinated tentacles with anionic termini, synth and properties, 10459
trifluoromethyl diterpenoids by carbonyl-ene cyclisation/cycloalkylation of trifluoromethyl ketones, 11921
trifluoromethyl ketones, synth through lithium-iodine exchange reaction, 12673
trifluoromethylalkenylketones by perfluoroacylation of alkenes with trifluoroacetic anhydride, 11023
trifluoromethylpyridines, reactions with alkyllithium reagents, directing effects of the trifluoromethyl group, 12259
Friedel-Crafts reaction
acetylation of ferrocenylheteroarenes, 5765
synth of indolylquinolines using indole or its 5-substituted derivs as substrates under Friedel-Crafts acylation conditions, 10803
Fulvenes and fulvalenes
phosphatriafulvenes, phosphaalkenes with inverse electron density, reactions with nucleophilic reagents, 759
regioselective palladium-catalysed allyla-

tion of fulvenes, 61

Fungi

Botrytis cinerea; structure of botcinolide, a new phytotoxic trihydroxylated nonalactone esterified with 4-hydroxy-2-octenoic acid, a metabolite of the mould *Botrytis cinerea*, 11585

cyathiformines A-C, fungal metabolites derived from chorismic acid, synth, 2715

19,20-epoxycytochalasin Q and deacetyl analogue, cytotoxic cytochalasins from the fungus *Xylaria obovata*, structures, 5615

foeniculoxin, phytotoxic geranylhydroquinone from *Phomopsis foeniculi*, 10371

Fusarium culmorum for hydroxylation of dihydro-β-campholenolactone, 10339

Rhizopus arrhizus ATCC 11145 for hydroxylations of octalone and hydrindenone, 8399

Furanones

(+)-(3*R*,4*R*,5*R*)-4-acetoxy-5-methyl-3-tetradecyltetrahydro-2(5*H*)-furanone from Gorgonian coral *Plexaura flava*, synth from tetronic acid derivs, 8337

5-alkoxy-2(5*H*)-furanones, kinetic resolution using a chiral aminoalcohol catalysed 1,4-addition of arylthiols, 4775

5-alkoxy-2(5*H*)-furanones, mechanism of diastereoselection in the photosensitised [2+2]-cycloaddition reaction of ethylene to–, 11167

benzofuranones by rearrangement of 2,3-disubstituted benzofuran epoxides, 11441

3-bromo-5-methylene- and 3-bromo-5-methyl-2(5*H*)-furanones by bromination of β-angelica lactone, 12457

5,5-disubstituted 2(3*H*)-dihydrofuranones containing side-chain carbonyl functions, synth, 8143

3-(1-hydroxyalkyl)-5*H*-furan-2-ones, synth and reactions with halogens as possible route to fimbrolides, 4201

5-(1-menthyloxy)-2(5*H*)-furanone, addition of *O*-silylcyanohydrin derived carbanion to – followed by reaction with aldehyde, key step in asymmetric synth of an isomer of podophyllotoxin, 10829

3,3a,4,6a-tetrahydro-2*H*-cyclopenta[*b*]furan-2-ones, synth from 3-hydroxy-6-heptenoic acids *via* bicyclo[3.2.0]hept-3-en-6-ones, 7645

Furans

2,5-dialkylfurans, Diels-Alder reaction with fumaronitrile, temperature and substituent effects, 12125

(+)-1,2-dihydrotubipofuran, furanosesquiterpenoid, synth from santonin, 5527

(±)-euryfuran, alternative synthetic approaches to – *via* the furan ring transfer reaction, 5645

furano bisbenzocycloheptene, a 5,8-bis-epimer of the tetra-*O*-methyl deriv of metasequirin B, a norcycloneolignan, synth, 3363

12-hydroxyambliofuran, 12-acetoxyambliofuran, five tetracyclic furanoditerpenes and a furanosesterterpene from Western Australian sponge *Spongia* sp., structures, 9893

malabarolide B_1 and menispermacide, furanoid diterpenes from stems of *Tinospora malabarica*, structure, 12109

methyl *N*-methyl- and methyl *N*-(2,4,6-trimethyl)phenyl-2-carboximidates of thiophene and furan, synth and investigation of metalation properties, 4149

(+)-muconolactone from arene biotransformation in *Pseudomonas putida*, production, absolute configuration and enantiomeric purity, 3587

octamethyltetraoxaquaterene furan macrocycle, conversion to acenaphane derivs, 9113

pseudo-α-D-arabinofuranose and two *pseudo*-D-arabinofuranosylnucleosides, (+)-cyclaradine and (+)-1-*pseudo*-β-D-arabinofuranosyluracil, synth from D-arabinose, 9961

2-sulfone substituted 1-furyl-4-penten-1-ols, synthetic and kinetic studies of substituent effects in Diels-Alder reactions of, 6767

tetrahydrofurans from 6-bromo-6-deoxy-1,4-aldonolactones and 6-bromo-6-deoxyalditols with D-*galacto*-, D-*altro*-, D-*manno*- and D-*ido*-configuration, 13285

3,4-bis(tri-*n*-butylstannyl)furan and 3-(tri-*n*-butylstannyl)furan, synth as building blocks for 3,4-disubstituted furans and 3-substituted furans respectively, 9583

Gibberellins
gibberellin A_{12} isomer by rearrangement of chloro-enol-lactone derived from diterpene epicandicandiol, 12643
Glycals
consecutive addition of phenylselenenyl chloride to – and glycosylation, synth of 2'-deoxy-pyranosyl nucleosides, factors controlling the stereoselectivity, 12219
2-deoxy-2-iodo-pyranosyl isothiocyanates from glycals, synth and transformations, 2877
Glycerol
glycerol-2-diethyl phosphate by reaction of photochemically excited dihydroxy acetone in 1,2-dimethoxy ethane with diethyl phosphoric acid, 3743
Glycolipids
glyceroglycolipids, transformation into lysoglyceroglycolipids by use of *Rhizopus arrhizus* lipase, 1993
glycosphingolipids, agelasphins, antitumour and immunostimulatory cerebrosides from the marine sponge *Agelas mauritianus*, structures and synth of AGL-9a, 2771
sphinganine analogues modified in the head group, synth and study of sphingolipid biosynthesis inhibitory activity, 13425
3-*O*-stearoyl C_{36}-corynomycolic acid and derived lipopeptides, synth, 6271
5-*N*- and 9-*N*-thioacylated sialic acids, synth by *N*-thioacylation of neuraminic acid methyl α-glycoside, 7445
Glycopeptides, glycoproteins
N-glycopeptides that contain extended sugar chains, synth and conformational analysis, 2373
5-*N*- and 9-*N*-thioacylated sialic acids, synth by *N*-thioacylation of neuraminic acid methyl α-glycoside, 7445
Glycosides
alkyl hex-2-enopyranosides, radical cyclisation of –, synth of fused furanopyranes, 5369
by cyclisation of glucal halohydrins, effect of the halide on formation, 6783
4'-deoxy C-3'-homo anthracyclines, synth from (*S*)-propylene oxide, 1165
di- and trisaccharides, synth by utilising the transgalactosylation potential of β-galactosidase from *Aspergillus oryzae*, 10407
Ferrier reaction, mechanistic and stereochemical studies of – by using (*E*)-selectively deuterated methyl[6-^{2}H]-2,3,4-tri-*O*-benzyl-α-D-*xylo*-hex-5-enopyranoside, 4125
flavanoid- and phenylpropanoid glycosides, antitumour agents from leaves of *Lantana camara*, structures, 9439
β-galactopyranosyl-(1-3) and (1-4)-xylopyranosides, conformational study by NMR, molecular mechanics, molecular dynamics and semiempirical calculations, 6417
β-D-glucopyranosides of 20-hydroxyecdysone, synth involving the combination of hydroxyl and 1,2-diol protective groups in the aglycone moiety, 9679
O-glycoside derivs from reaction of 2-alkoxy-2-fluoro-glycosyl fluorides with benzyl alcohol derivs, 9125
hapaioside, 4-hydroxy-6-oxopregnane-3-glycoside from Pohnpei sponge *Cribrochalina olemda*, structure, 12593
hosenkosides A-E, baccharane glycosides from the seeds of *Impatiens balsamina*, structure, 4973
including sialoglycosides by glycosylation using glycosyl phosphite as a glycosyl donor in the presence of Lewis acid, 6523
lignan and chalcone glucosides from the roots of *Pyracantha coccinea*, structures, 5181
pregnane glycosides from *Leptadenia reticula* Wight and Arn, 789
shimofuridins B-G, nucleoside deriv containing an acylfucopyranoside moiety from the Okinawan marine tunicate *Aplidium multiplicatum*, isolation and structure, 8651
thioglycosides by reaction of sugar thiocyanates with Grignard reagents, 2975
Glycosylation
using glycosyl phosphite as a glycosyl donor in the presence of Lewis acid, 6523
Grignard reactions/reagents
addition of - to 1,3-oxazolidines and chiral imines, synth of (*R*)-2-aryl- and (*R,R*)-2,5-bis(aryl)pyrrolidines, 1083

erythro-selective addition of a Grignard reagent to a *cis*-α,β-epoxy aldehyde, subsequent conversion to 3-amino-1,2-diol, dihydroxyethylene dipeptide isostere A-82768, 6163
ethylmagnesium bromide, reaction with the sulfinyl group of α-halo-α-sulfinyl carboxylic acid, esters and aldehydes, synth of magnesium enolates and subsequent conversion to α-halocarboxylic acid derivs, 4957
geminal diGrignard reagents by reaction of geminal dihalides with magnesium and sodium, mechanism, 5945
Grignard reagent addition to enones using mercaptoaryl-oxazolines as ligands, 4467
primary alkyl Grignard reagents, addition to carbocyclic and heterocyclic aryl-ketones in the presence of magnesium TADDOLate, 6117
reaction with sugar thiocyanates, synth of thioglycosides, 2975
substitution of allylic phosphates with Grignard reagents using a transition metal catalyst, 6017

Guanidines
nucleoside dimers with an *N*-cyanoguanidine linkage, synth and use as building blocks for oligonucleotide synth, 7231
phloeodictines A1-7 and C1-2, antibiotic and cytotoxic guanidine alkaloids from the New Caledonian sponge *Phloeodictyon* sp., structures, 3415
[5+5] rigid bicyclic guanidines and 1,3,6-benzothiadiazepino[3,2-*a*]benzimidazole derivs by reaction of bis(iminophosphorane) with isocyanate, 10029

Halogenation
of 3-(1-hydroxyalkyl)-5*H*-furan-2-ones as possible route to fimbrolides, 4201
aromatic iodination of aromatic compds with iodine and a mercury(II) salt, 5139
asymmetric bromination of chalcone and benzylideneacetone in β-cyclodextrin complex, 7903
bromination of β-angelica lactone, synth of 3-bromo-5-methylene- and 3-bromo-5-methyl-2(5*H*)-furanones, 12457
bromination of benzobarrelene, rearrangement of barrelene skeleton, 10555
bromination, nucleophilic 1,2-addition of bromine to electron deficient double bonds by perbromide reagents, 6433
bromination of some *N,N*-disubstituted anilines, surfactant control of the *ortho/para* ratio, 3797
bromination *versus* alkylation in synth of 2-bromoesters from carbanions using 1,2-dibromoethane, 9825
α-chlorination of α-phosphoryl sulfoxides with iodobenzene dichloride and sulfuryl chloride, stereochemistry, 8053
chlorination of ellipticine 5,11-dimethyl-6*H*-pyrido[4,3-*b*]carbazole *via* its *N*-oxide, synth and selective acetylation of 5,6,11-trimethyl-5*H*-benzo[*b*]carbazole, 4811
chlorination of hydrocarbons, ionic substitution reactions in $GoAgg^{IV}$ chemistry, 31
α-chloro-α-chlorosulfenyl ketones from chroman-4-ones, 5245
fluorination of allyl β-keto carboxylates using *N*-fluoro-2,4,6-pyridinium triflate, subsequent decarboxylation to α-fluoro-ketones, 487
fluorination with $CsSO_4F$; effect of structure of alkene and alcohol on stereochemistry and relative rate of fluoroalkoxylation, 12235
fluorination of the pyrrole ring with xenon difluoride in synth of 2-fluoro-11-hydroxy analogue of porphobilinogen, inhibitor of porphobilinogen deaminase, 6181
fluorination of trialkylstannylindoles with cesium fluoroxysulfate, synth of inter-alia 2- and 3-fluoroindoles, 1899
perfluoroacylation of alkynes using trifluoroacetic anhydride activated by $BF_3.SMe_2$ complex, synth of α,β-unsaturated sulfones with a trifluoroacyl group *via* sulfonium salts and sulfides, 12407
perfluoroacylation of cyclopropyl-containing alkenes, 775
side-chain bromination of *N*-phthaloyl-(*S*)-phenylalanine and tyrosine derivs followed by treatment with silver nitrate, synth of β-hydroxyphenylalanine and β-hydroxytyrosine derivs, 7327

Halogens
β-amido-alkylzinc iodides and related con-

figurationally stable zinc organometallics, synth by direct insertion of zinc dust into the corresponding alkyl iodides, 2415
bromine-lithium exchange of 3,3'-dibromostilbene with one equivalent of n-butyllithium, s-butyllithium or t-butyllithium, synth of 3-bromostilbene and stilbene, 5999
bromine/lithium and bromine/zinc exchange reactions of *gem*-dibromo compds, stereochemistry in lithium and zincate carbenoid formation, 7987
carboxylic acid halides, reaction with alcohols; alkyl halide vs. ester formation, 217
α-chlorocinnamates, synth by reaction of glycidic esters with *in situ* prepared chloromethyleneiminium salts, 2433
dihydrazonyl dihalides, use in preparation of 2,2'-bi(4,5-dihydro-1,3,4-thiadiazole) and 2,3-disubstituted 1,4-benzothiazine derivs, 5091
exchange of halogens between aromatic compds in the presence of Cu-HZSM-5 zeolite, 12913
formation of the 5-iodopentyl formate in the photolysis of cyclopentanol hypoiodite in the presence of mercury(II) oxide-iodine, 13101
halogen migration during metalation of pyrimidines, unusual halogen-lithium exchange with LTMP, synth of Leshmaniacides, 10299
2-[(*Z*)-haloiodomethylidene]bicyclo[3.2.1]-octan-3-one and 3-[(*Z*-haloiodomethylidene]bicyclo[3.2.1]octan-2-one by ring expansions of 2-haloethynyl-2-norbornals, 11793
iodoarenes by reaction of aromatic compds with iodine and a mercury(II) salt, 5139
nucleophilic 1,2-addition of bromine to electron deficient double bonds by perbromide reagents, 6433
polyhalogenonitrobenzenes, mechanistic studies on the electrochemical reductive coupling of–, example of radical anion dimerisation, 6913
secondary halogen magnesioamides, reaction with 2-methyl-1,3-dioxep-4-ene, synth of 4-aminobut-2-enols and 2-aminobut-3-enols, 12953
see also Fluorine and compds

Halohydrins
halohydrin hydrogen-halide-lyase (H-lyase) from *Escherichia coli* as catalyst for the synth of (*R*)-γ-chloro-β-hydroxybutyronitrile from epichlorohydrin or 1,3-dichloro-2-propanol, 11821

Heck reaction
carbon-carbon-coupling reaction (Heck reaction) of metalated β-monohalosubstituted porphyrins and terminally substituted acetylenic derivs, synth of β-substituted porphyrins, 11933
intramolecular - for preparation of steroid and terpene intermediates having *cis* A-B ring fusions, model studies for the total synth of complex cardenolides, 347

Homologation
of carbonyl compds based on rearrangement of β-oxido carbenoid generated from ligand exchange reaction of the sulfinyl group of α-chloro β-hydroxy sulfoxide, 11839
of enantiomerically pure γ-hydroxy vinyl sulfone, synth of γ-hydroxy sulfones of polypropionate structure, 7557
one-carbon - of allylamines, synth of βγ-unsaturated amides, 453

Hormones
14β-allylestrone and the derived 14α,17α-ethano analogue of estriol by cycloaddition of 3-methoxyestra-1,3,5(10),14,16-pentaen-17-yl acetate with acrolein, 6363
angiotensin II antagonist, report on drug discovery programme, 13049
13-ethyl-11-methylene-18,19-dinor-17α-pregn-4-en-20-yn-17-ol (desogestrel), steroid hormone, and its metabolite 3-oxo desogestrel, synth from the 18a-homo steroid, 10709
16-functionalised 14α,17α-etheno-19-norsteroids, ring D bridged hormone analogues, 6347
inhibition of growth hormone release from pituitary cells by somatostatin analogues incorporating nucleo amino acids, 7485
nitrogenous brassinosteroids, steroidal phytohormones, synth from *Solanum*

steroid alkaloid solanidine, 10923
Horner-Wittig reaction
for synth of enol ethers, 13207
Host compds
cage-type cyclophanes having a helically twisted and cylindrical internal cavity, specific molecular recognition by-, 13601
complexation of amino acids by cyclotetrachromotropylene in aqueous solution, importance of CH-π and π-π interactions, 3453
complexes of Rebek's diacid with pyrazine and quinoxaline, crystal and molecular structures, 8559
coumarin encapsulated in β-cyclodextrin, reduction of, 12979
β-cyclodextrin complex, asymmetric bromination of chalcone and benzylideneacetone in –, 7903
diester-calix[4]arenediquinone complexation and electrochemical recognition of group 1 and 2, ammonium and alkyl ammonium guest cations, 931
2,7-dimethyltricyclo[4.3.1.$1^{3,8}$]undecane-*syn*-2, *syn*-7-diol as a host for volatile and odorous guest molecules, 8749
heptapeptides bearing a host and a guest side chain, design and synth, 989
[10] heterophanes, synth from 2-nitrocyclododecanone by ring enlargement, 8665
macrocyclic crown-formazans, synth by azo coupling of bis-diazonium salts with pyruvic and arylpyruvic acids, 11489
supramolecular host systems; structural and conformational study of the 1,3,5,7-tetraoxadecalin core system, 9691, 9707
tetrapus molecules with fluorinated tentacles with anionic termini, synth and properties, 10459
Hydantoins
see Imidazolidines, imidazolidinones
Hydrazines
and amines by catalytic asymmetric reductive amination of ketones *via* highly enantioselective hydrogenation of the C=N double bond, 4399
N-benzylhydrazine, addition to sugar δ-enlactones, stereo- and regiochemistry, 7219
6-chloro-4- and 5-hydrazino-2-phenyl-3(2*H*)-pyridazinones, reaction with Vilsmeier reagent, synth of pyrazolo-[3,4-*d*]pyridazinones, 12933
reaction with 4,5-dichloro-1,2,3-dithiazolium chloride (Appel's Salt), synth of imines containing the 1,2,3-dithiazole ring, 10037
Hydrazones
2-alkyl-3-iminomethylchromones, cycloaddition with *N*-phenylmaleimide, synth of 2-azaxanthones, 4905
dihydrazonyl dihalides, use in preparation of 2,2'-bi(4,5-dihydro-1,3,4-thiadiazole) and 2,3-disubstituted 1,4-benzothiazine derivs, 5091
2-ethoxybut-2-enal *N,N*-dimethylhydrazone, cycloadditions with quinoline-5,8-diones or benzo[1,2-*b*]furan-4,5-diones, synth of furo[2,3-*f*]quinoline-4,5-diones, 8457
hydrazonyl halides and halooximes, reaction with β-perfluoro-β-dicarbonyl compds, synth of 5-perfluoroalkylpyrazoles, 5-perfluoroalkylisoxazoles and 4-perfluoroacylisoxazoles, 8827
2-oxohydrazones *via* electrophilic α-*p*-tolylhydrazonylation of ketone enolates with t-butyl *p*-tolylazo sulfide, 11239
sodium salts of acylhydrazones of 1,3-dioxo-compds, acylation to (*E*)-β-ketoenehydrazides, 11447
sulfenylated acetaldehyde SAMP-hydrazones, alkylation of, synth of 2-sulfenylated aldehydes, 3349
$\alpha\beta$-unsaturated hydrazones and pyrazole derivs from β-functionalised phosphonium salts, phosphine oxides and phosphonates, 12727
Hydrindans
by tandem ring expansion and insertion reaction of alkenic cyclobutanols mediated by palladium, 10391
Hydrocarbons
activation of benzylic methylene groups under $GoAgg^{IV}$ and $GoAgg^{V}$ conditions, 1011
functionalization of saturated -, use of t-butyl hydroperoxide as oxidant in Gif-type systems, 19, 31
spherical hydrocarbon *p*-[$4^2.5^8$]decahedrane, development of a strategy for the synth of, 4949
transformation into ketones/alcohols and

alkenes, application of t-butyl hydroperoxide and dioxygen using soluble Fe(III) and Cu(II) chelates, 2665
triaromatic steroid hydrocarbons methylated at position 2, 3 or 6, synth from pregnenolone, cholesterol or stigmasterol *via* stera-3,5-dienes, molecular fossils of unknown biological origin, 1731
Hydrogen bonding
intramolecular – in bilirubin analogues with *N,N*-methylene bridges, 9919
intramolecular – in primary hydroxyl of thymine 1-(1-deoxy-β-D-psicofuranosyl)-nucleoside, 6689
in pentapyrrole analogues of bilirubin and biliverdin, synth and properties, 8579
Hydrogenation
of (α)-*N*-acetamidocinnamic acid using optically active expanded chelate phosphines derived from 1,ω-bis(dichlorophosphino)alkanes as catalysts, 4303
asymmetric reductive amination of ketones *via* highly enantioselective DuPHOS-Rh-catalysed hydrogenation of the C=N double bond, 4399
BINAP-Ru(II) complexes in hydrogenation; organometallic ways for multiplication of chirality, a summary of the work of R. Noyori, 4259, 4259
in the presence of lanthanide *tris*-β-diketonates as protecting reagents, 6921
selective - of carbon-carbon double bond of αβ-unsaturated ketones with Pd/C using limonene as the hydrogen source, 973
using (*S*-1,2-bis(diphenylphosphino)-butane-4-ol as a catalyst, 10419
Hydrogenolysis
of C-17 and C-20 allylic carbonate; method for stereospecific generation of natural C-17 stereochemistry and C-20 epimer in steroid side-chains, 475
Hydrolysis
enantioselective – of (*R,S*) 2-aryl propionates using semipurified lipase of *Candida cylindracea*, 10749
resolution of (1,1'-binaphthalene)-2,2'-dithiol by enzyme catalysed – of the corresponding *S,S'*-dipentanoate, 7109
Hydroxy-acids, -esters
allophenylnorstatine, β-amino-α-hydroxy acid found in kynostatin class of HIV-1 protease inhibitors, synth, 3975
(*S*) and (*R*) 4-(*p*-anisyloxy)-3-hydroxybutyrates as building blocks for synth of β-lactam antibiotics, 11967, 11983
α-hydroxy acids, reaction with bis-dihydropyrans to yield dispiroketals, subsequent reaction of the enolates with electrophiles, 7157
E-β-hydroxy acrylic acid and *E*-β-hydroxy vinylamine, use of 3-borylpropenoic acid derivs as synthetic equivalents, 3397
γ-hydroxy-α-amino acids from (*Z*)-2-phenyl-4-benzylidene-5(4*H*)-oxazolone *via* a dihydro-1,3-oxazine intermediate, 10021
α-hydroxyphosphonates, absolute configuration by ^{31}P NMR spectroscopy of corresponding Mosher esters, 10253
Hydroxylation
aromatic – by flavins; evidence for direct attack of phenylalanine by flavinoxy and $HO^{\cdot}$ radicals, 5287
of aromatics in a flavin-initiated chain reaction, 6759
asymmetric dihydroxylation of (2*S*,3*R*) 5-phenylpent-4-en-2,3-diol derivs, 5021
of dihydro-β-campholenolactone by fungus *Fusarium culmorum*, 10339
of (2*S*)-5-guanidino-2-(2'-oxoazetidin-1'-yl)pentanoic acid catalysed by clavaminic acid synthase, 8737
heterogeneous catalytic asymmetric – of olefins; a new polymeric support and a process improvement, 11321
of octalone and hydrindenone using *Rhizopus arrhizus* ATCC 11145, 8399

Imidates, *see* Imidic acids and derivs
Imidazoles, imidazolines
1-arenesulfonyl-4-nitroimidazoles, reactions with aniline in aqueous methanol solution, 5741
2-(t-butyl)-3-methylimidazolidin-4-one, reaction with aldehydes, synth of azomethine ylids, 189
enolates derived from 1,3-diacyl-imidazolidine-2-thiones and 1,3-diacylimidazolidin-2-ones, aldol reactions of, 6621
ethyl cyanoimidazolecarboxylates, regioassignments by nOe studies on mono-

cyanoimidazoles, 2641
imidazole and benzimidazole addition to quinones, formation of *meso*- and d,l isomers of 2,3-bis(benzimidazol-1'-yl)-1,4-dihydroxybenzene, 12489
iminophosphorane mediated imidazole ring formation in synth of aplysinopsin type alkaloids of marine origin, 2241
Imidazolidines, imidazolidones
homochiral C_2-symmetric 1,3-diacylimidazolidin-2-ones, boron enolates of – prepared from tartaric acid, use in aldol and alkylation reactions, 7521
Imides
α-imide substituted radicals generated from the corresponding Barton esters, stereoselective reactions of, 7029
methyl *N*-methyl- and methyl *N*-(2,4,6-trimethyl)phenyl-2-carboximidates of thiophene and furan, synth and investigation of metalation properties, 4149
phthalonimide, occurrence of an electrophilic phthalonimidyl radical in photochemical reactivity of, 4987
sinharines, penimides and illukumbins, sulfur containing amides from *Glycosmis cyanocarpa*, synth and corrected structures, 6279
Imines
2-acetamido-1,2,4-trideoxy-1,4-imino-D-galactitol and -D-glucitol, synth as glycosidase inhibitors, 13299
activated imines of enolates from chiral *N*-acyloxazolidinones, addition to, 12755
addition of Grignard reagents to 1,3-oxazolidines and chiral -, synth of (*R*)-2-aryl- and (*R,R*)-2,5-bis(aryl)pyrrolidines, 1083
aldimines, asymmetric 1,2-addition of organolithiums to – catalysed by chiral amino ether, 4429
6-amino-1,4,6-trideoxy-1,4-imino-D-mannitol dihydrochloride and 4-amino-1,4,6-trideoxy-1,6-imino-D-mannitol dihydrochloride as inhibitors of α-mannosidase, 1033
for condensation of titanium enolates of 2-pyridyl thioesters, synth of β-lactams, 9471
condensation of titanium enolates of 2-pyridylthioesters with -; influence of the imine structure on the *trans/cis* stereoselectivity, 2939
containing the 1,2,3-dithiazole ring, synth by reaction of 4,5-dichloro-1,2,3-dithiazolium chloride (Appel's Salt) with *N*-nucleophiles, 10037
deoxybenzoin imines, reduction and acylation of - in preparation of 1,2-diarylethylamines and ethylenenamides, 2207
2,6-dichlorobenzoquinone *N*-chloroimine, reaction with 2,6-di-t-butyl-4-chlorophenol, *ortho–ortho* 2,4-cyclohexadiene-1-one rearrangement of the reaction product, mechanism, 8809
1,4-dideoxy-1,4-imino-hexitols, synth from aldonolactones and evaluation as glycosidase inhibitors, 7513
ethoxycarbonyl-nitrile benzylimine $EtOOCC{\equiv}N^{+}\text{-}N^{-}CH_2C_6H_5$, cycloadditions of – and synth of β-amino acids; synth and reactions of ethyl 2-chloro-2-ethoxyacetate and 2-chloro-2-ethoxy-acetyl chloride, 7543
from α-amino acids and alloxan or pyrazolin-4,5-diones, 895
imines of α-amino acids, non-decarboxylative 1,3-dipolar cycloadditions of - as a route to proline derivs, 3159
imines or enaminoketones prepared from halogeno anilines and carbonyl derivs, $NaNH_2$-t-BuONa promoted arynic cyclisation of, synth of indoles, 11903
iminyl radicals, generation by addition of tributylstannane to sulfenylimines or from derivatives of oximes, reactivity, 1745, 1757, 1769
ketenimines, synth from iminophosphoranes and intramolecular Diels-Alder cycloaddition to benz[*f*]indoles, 5027
oxygen transfer of – using the oxaziridinium salt derived from dihydroisoquinoline as the transfer reagent, synth of nitrones, 12185
reaction with tin enolates of 2-pyridylthioesters, synth of β-lactams, 5821
Schiff base substrates in enantioselective synth of α-amino acids by phase transfer catalysis, 4507
Schiff bases, complex prepared *in situ* from titanium tetraisopropoxide [$Ti(O\text{-}i\text{-}Pr)_4$] and chiral Schiff bases as catalyst for enantioselective addition of trimethylsilyl cyanide to aldehydes, 4385

Schiff bases and $[Ru(\eta^6\text{-}C_6H_6)Cl_2]_2$ as catalyst for hydrogen-transfer reduction of ketones with 2-propanol, 4347
trapping of the quinone imine intermediate in reaction of 1-(4-methoxyphenyl)azetidin-2-ones with cerium(IV) ammonium nitrate (CAN), 4185
Iminium salts
N-acyliminium ion cyclisation to 3-azabicyclo[3.3.1]nonanes, intermediates in synth of 2,4-disubstituted 1-aza-adamantanes, 8853
asymmetric electrophilic α-amidoalkylation; camphorimide derived auxiliary for the asymmetric synthesis with *N*-acyliminium ions, synth of 2-substituted piperidines, 3113
chloromethyleneiminium salts, reaction with glycidic esters, synth of α-chlorocinnamates, 2433
fused bicyclic iminium ions by double cyclisation of ω-chloro azidoalkenes, 12293
methoxymethyleniminium salts and lithium alkoxides derived from allyl alcohols, synth and Meerwein Eschenmoser rearrangement to 3-mono and disubstituted lactams, 4025
vinylogous iminium salts, reaction with 3-amino-1,2,4-triazole, synth of 7- and 5-substituted triazolo[1,5-*a*]pyrimidines, 12113
Imino ethers *see* Imidic acids and derivs
Immunostimulation
agelasphins, antitumour and immunostimulatory cerebrosides from the marine sponge *Agelas mauritianus*, structures and synth of AGL-9a, 2771
3-*O*-stearoyl C_{36}-corynomycolic acid and derived lipopeptides, immunomodulators, 6271
Immunosuppressive compds
analogues of immunosuppressant FK506, total synth, 809
FK 506 from *Streptomyces tsukubaensis* 9993, prep of des-28-(cyclohexyl)methylene-28-oxo-ascomycin, chemoselective removal of the cyclohexyl residue of ascomycin, 13655
rapamycin; reactions of allyl silanes with oxonium ions generated from α-alkoxy sulfones in route to C37-C42 fragment of rapamycin, 835
Indanes
glucal halohydrins, synth and cyclisation to glucal epoxides, effect of the halide on epoxide formation, 6783
2-(lithiomethylene)-1,1,3,3-tetramethylindane; a β,β-shielded vinyllithium example for a quantification of structure, monomer-dimer equilibrium and some reactivity parameters, 5845
Indoles
3-alkylidenisoindole derivs by cyclisation of 2-alkynylbenzamides, 11803
(−)-antirhine, indole alkaloid, enantioselective synth by chemo-enzymatic approach from (1*R*-2*S*)cyclohexene dimethanol monoacetate, 8837
benz[*f*]indoles by intramolecular Diels-Alder cycloaddition of unsaturated ketenimines, 5027
1*H*-benz[*g*]indole-4,5-diones by (3+2) photoaddition of 4-amino-1,2-naphthoquinones with alkenes, 8293
by arynic cyclisation of imines or enaminoketones prepared from halogeno anilines and carbonyl derivs and promoted by $NaNH_2$-t-BuONa, 11903
3-[(1-chloro-2-substituted)ethylidene]indol-2(3*H*)-ones, reaction with ethylchloroformate and triethylamine, synth of 3-(ethynyl)-2-(ethoxy-carbonyloxy)indole-1-carboxylates, 12697
(±)-cuanzine and (±)-decarbomethoxyapocuanzine, indole alkaloids, synth from 7-methoxytryptamine, 8209
cyclopropamitosenes (7-methoxy-1,2-cyclopropapyrrolo[1,2-*a*]indoles), bioreductive anticancer agents, synth of − and related indolequinone, 7657
4,6-dimethoxy-2,3-diphenylindole, substitution, oxidation and addition reactions at C-7, 10497
5,7-dinitro-3-diazo-1,3-dihydro-2*H*-indol-2-one, diazo transfer reaction with cyclic enaminones, synth of bicyclic triazoles, 6723
2-(1,3-dithian-2-yl)indole, application to synth of the ABED ring system of *Strychnos* alkaloids, 6585
(−)-eburnamonine, tetracyclic indole alkaloid antihypertensive drug, formal synth by [3,3]-sigmatropic rearrangement

of β-alkoxy acrylate derived from *rac*-3-ethyl-cyclohexenol, 9487
2-ethoxypyrrolin-5-one, 2-ethoxyisoindol-3-one and 2-ethoxy-1*H*-indol-3-one, cycloaddition reactions of nitrile oxides and nitrilimines with–, 5159
geissoschizine isomers, synth using Claisen rearrangement, 3537
1*H*-indazoles by treatment of (*o*-alkylaryl)azosulfides with potassium t-butoxide, 3529
indole derivs by substitution reactions of ninhydrin with 3,5-dimethoxyaniline, 10983
N-indole-(2-mesitylenesulfonyl)-β-methyltryptophan, asymmetric synth of optically pure isomers of - for peptide synth, 2391
indolylquinolines, synth using indole or its 5-substituted derivs as substrates under Friedel-Crafts acylation conditions, 10803
11-methoxygelsemamide having a 1,2-secoindole system, synth from sarpagine type indole alkaloid gardnerine, 8363
5-methoxyindoles, demethylation, alkylthiolation and reduction of–, routes to 5-hydroxyindoles, 13433
2-substituted-3-acylindoles by palladium-catalysed carbonylative cyclisation of 2-alkynyltrifluoroacetanilides with aryl halides and vinyl triflates, 437
3-substituted-5*H*-1,2,4-triazino[5,6-*b*]indoles, reactions with π-acceptors, synth of nitrogen heterocycles, 9997
trialkylstannylindoles, fluorination with cesium fluoroxysulfate, synth of inter-alia 2- and 3-fluoroindoles, 1899

Indolines

3-hydroxy-3-pyridyl-isoindolin-1-ones *via* metalation of benzanilides, 2907
5,5-, 5,6- and 5,7-spiroindolines by palladium-catalysed Heck-type cyclisation reactions, 359
3-unsubstituted-2-indolinones by Nafion-H catalysed cyclisation of α-carbomethoxy-α-diazoacetanilides, 609

Indolizines, indolizidines

castanospermine, synthetic functionalisation at C-6, synth of australine and analogues, 2131
indolizidine and decalin derivs by asymmetric Heck reaction of alkenyl iodides in the presence of silver salts, importance of silver salts, 371
3-phenyl substituted indolizidin-2-ones and pyrrolizidin-2-one by rearrangement of 5-benzoyl substituted isoxazolidines, 12713
(±)-septicine, indolizidine alkaloid, synth from dimethyl squarate involving ring expansion of 2,3-bis-(3,4-dimethoxyphenyl)-4-(1-pyrrolo)cyclobutenone, 6173
swainsonine-analogues hydroxyindolizidines by cyclocondensation of sugar azomethines with Danishefsky's diene, 13671
(±)-tylophorine, phenanthroindolizidine alkaloid from *Tylophora asthmatica*, synth by intramolecular cycloaddition of an azide with an ω-chloroalkene, 12293

Infrared spectra

1-alkoxycarbonylalkylidenetriphenylarsoranes, 13765
of crown ether peptides, 989
GC-FTIR for *cis*- and *trans*-configurations of α,α'-disubstituted piperidines and pyrrolidines, 11329
UV, (*E*) and (*Z*)-iodoalkylidene lactones, 2161

Insecticides

azadirachtin, antifeedant from *Azadirachta indica*, synth of derivs of – containing fluorescent or immunogenic reporter groups, 8871
pipercide and piperolein A, insecticidal unsaturated amides from black pepper *Piper nigrum*, synth, 11113
strigol from roots of *Gossypium hirsutum*; prep of 1-oxo-hydrindene-2-acetic and -propionic acids as precursors of strigol and its analogues, 2895

Insects

coccinellid beetle, *Chilocorus cacti*, structure of a heptacyclic alkaloid chilocorine from, 2365
erythro-3,7-dimethylpentadecan-2-yl acetate, pheromone of the Scots pine sawfly *Neodiprion sertifer*, synth by ring opening of *trans*-2,3-epoxybutane by higher order cuprate, 5225
Halocynthia roretzi ascidian, isolation of 3,4-dihydroxystyrene dimers from marine sponge *Jaspis* sp., inducers of larval metamorphosis in–, 13583

(2*R**,5*R**)-2-(1-hydroxy-1-methylethyl)-5-methyltetrahydrofuran (pityol), pheromone of bark beetle *Pteleobius vittatus*, synth by enzyme-triggered opening of an epoxide, 8661
ipsenol, aggregation pheromones of the bark beetle *Ips paraconfusus*, synth from 2-(chloromethyl)-3-tosylpropene, 5829
ladybug defence alkaloid, precoccinelline, stereoselective synth from (2*S*,6*R*)-2-cyano-6-oxazolo-piperidine, 3123
larvae of leaf beetles *Phaedon amoraciae, Phaedon cochleariae, Gastrophysa viridula* and *Plagiodera versicolora*, biosynthesis of chrysomelidial and plagiodial, defensive iridoid monoterpenes from –, 6859
Z,Z-2-octadec-9,12-dienoyl-4-hydroxycyclo hexane-1,3-dione, kairomone and defensive compds of some insects, synth, 6377
processionary moth *Thaumetopoea pityocampa*, use of 11-hexadecynoic acid and (*Z,Z*)-11,13-hexadecadienoic acid to investigate the biosynthetic pathway to the sex pheromone of –, 9789
serricornin, (4*RS*,6*S*,7*S*)-7-hydroxy-4,6-di methyl-3-nonanone, sex attractant of female cigarette beetle *Lasioderma serricorne*, synth, 2703
solenopsins, venom alkaloids of *Solenopsis geminata* and *invicta* ants, absolute configuration, 8465
(*Z*)-9-tricosene (muscalure), pheromone from the common house fly *Musca domestica* L., synth involving desulfurisation of 5,6-dihydro-1,4-dithiins, 7265

Insertion reactions
rhodium carbenoid mediated O-H insertion reaction with trialkyl 2-diazophosphonoacetates, synth of trialkyl 2-aryloxyphosphonoacetates, 3177
rhodium carbenoid mediated O-H insertion reactions; O-H insertion *vs.* H-abstraction and effect of catalyst, 3195
tandem ring expansion and insertion reaction of alkenic cyclobutanols mediated by palladium, synth of bicyclo-[4.3.0]nonane systems, 10391

Ionisation
of 1,3- and 3,3-bis(alkyl/phenylthio)-propenes, generation of α- and γ-substituted vinylthionium ions, allylation with, 9377

Iridoids
chrysomelidial and plagiodial, defensive iridoid monoterpenes in larvae of leaf beetles *Phaedon amoraciae, Phaedon cochleariae, Gastrophysa viridula* and *Plagiodera versicolora*, biosynthesis, 6859

Iron and compds
anils of benzoylferrocene, synth and mercuration of, 10467
ferrocenylheteroarenes, electrophilic substitutions on, 5765
Gif systems for activation of benzylic methylene groups, 1011
ionic substitution reactions in $GoAgg^{IV}$ chemistry, formation of C-Hal, C-N, C-S and C-C bonds, 31, 47
iron transport system of *Paracoccus denitrificans*, new synthetic probes of, 11781
transformation of hydrocarbons into ketones/alcohols and alkenes, application of t-butyl hydroperoxide and dioxygen using soluble Fe(III) and Cu(II) chelates, 2665
tripodal ligands possessing six convergent hydroxyl groups, a novel family of iron seqestering agents based on *o,o'*-dihydroxybiphenyl subunits, 2077

Isochromanes
from reaction of 2-alkoxy-2-fluoro-glycosyl fluorides with benzyl alcohol derivs, 9125

Isocyanates
arylisocyanates, reaction with ethyl (*S*)-(–)-lactate followed by saponification, synth of amino acids, 10309
chlorosulfonylisocyanate, addition to heterocycles such as thiophene or indole, synth of *N*-chlorosulfonylamides and subsequent conversion to nitriles, 6549
isoselenocyanates, synth from the corresponding formamide, subsequent access to *O*-alkylselenocarbamates, 639

Isomerisation
asymmetric Rh(I) catalysed [4+2] cycloisomerisation reaction; electronic and torsional ligand control of absolute stereoselection, 6145
of 1-methylene-2-methyl-2-(2-oxopropyl)-cyclohexanes to 2-methylene-1-methyl-1-(2-oxopropyl)-cyclohexanes by ene and retro-ene reaction, 8765
of (*E*)- to (*Z*)2-oxoindolin-3-ylidene

ketones, 10955
photoisomerisation of (*E*)-iodoalkylidene lactones, synth of (*Z*)-iodoalkylidene lactones, 2161
Isomerism
atropoisomerism; reactions of pyrrolidine enamines of cyclic and acyclic 3,4-dioxobutanoic acid derivs with dimethyl acetylenedicarboxylate, 13857
Isomers
Z- and *E*-isositsirikine epimers, prep and conformational study of –, determination of their C16 configurations, 9207
meso- and d,l isomers of 2,3-bis(benzimidazol-1'-yl)-1,4-dihydroxybenzene, synth, 12489
predictions of which diastereoisomeric salt precipitates during an optical resolution *via* diastereoisomeric salt formation, 6907
Isoprenoids
isoprenoid aldehydes by vinylation of tertiary allylic alcohols with iodo-acetal and subsequent acetal-hydrolysis-dehydration reaction, 3389
"pull-push" activated isoprenes, Diels-Alder reactions with aceto- and acrylonitrile, PM3 calculations, 10379
Isoquinolines
3-arylisoquinolium salts by Bischler-Napieralski reaction of 1,2-diarylethylenenamides, subsequent transformation into 12-methyl substituted benzo[*c*]phenanthridines, 2207
1*H*-benz[*de*]isoquinoline, synth by 1,3-dipolar cycloaddition or direct reaction of bromo-alkylidene with ammonia, 7495
5-benzyl-, 5,9-dibenzyl- and 4,4-dibenzyl-5,6-dihydroisoquinolines and 4-benzyl-1,2,3,4-tetrahydroisoquinolin-3(2*H*)-ones from alkylation of 1-alkyl-4-cyano-3-methoxy-5,6-dihydroisoquinolines, 13277
bromobenzylisoquinolines and benzylisoquinol-3-ones, radical cyclisation of, synth of aporphines or 5-oxoaporphines and 5-oxodehydroaporphines respectively, 2107
11*H*-4b,10b-dihydro[1]benzopyrano[4,3-*c*]-isoquinoline-6,11(5*H*)-diones from homophthalic anhydride and *N*-(2-hydroxyarylidene)alkylamines, 9399
1-methyl-6,7-dimethoxy-3,4-dihydroisoquinoline, reaction with methyl or ethyl acetate or acetonitrile, synth of 1-(3'-substituted-propyl)benzo[*a*]quinolizidinones and quinolizidines, 4873
michellamines, dimeric naphthylisoquinoline alkaloids, assignment of axial chirality by calculated and experimental CD spectra, 7807
palladium complexes of 1-(2-diphenylphosphino-1-naphthyl)isoquinoline as catalysts for the reaction between (*E*)-1,3-diphenyl-2-propenyl acetate and diethyl malonate, 4493
3-phenyl-2-(*p*-toluenesulfonyl)-1,2-dihydro-4(3*H*)-isoquinolinone, synth and transformation to 5-(*p*-toluenesulfonyl)-5,6,13,14-tetrahydro-12(11*H*)-benzo[*c*]-phenanthridinones, 10971
(–)-quinocarcin, antitumour antibiotic, synth of ABE and ABC ring systems, D-ring fragments and total synth and antitumour activity, 6193, 6209, 6221, 6239, 6259
quinoline, 4-quinazolinone–isoquinoline and *N*-methyloxindole, reaction with sodium naphthalenide, a single-electron transfer reagent, synth of dimeric and trimeric products, 9079
7-substituted dehydronoraporphines, isoquinoline alkaloids, synth by intermolecular benzyne cycloaddition approach, 11257
Isosteres
pyrimidine isostere of the *N*-methyl-D-aspartate antagonist SDZ EAB 515, synth, 5735
Isothiocyanates
C-C coupling reactions with lithium enolates of protected glycine esters, synth of β-enamino esters, 11509
condensation of 2-amino-2-deoxysugars with isothiocyanates, synth of *cis*-1,2-fused glycopyrano heterocycles, 3273
2-deoxy-2-iodo-pyranosyl isothiocyanates from glycals, synth and transformations, 2877
in synth of 3-(thiazol-2'-ylidene)pyridines and fused derivs, 5807
Isotope substitution *see* Labelling
Isoxazoles
3-hydroxyisoxazole, 5-isoxazolone and 5-pyrazolone systems, allylation of, kinetic

vs. thermodynamic control and steric hindrance, 515
5-perfluoroalkylisoxazoles, 4-perfluoroacylisoxazoles and 5-perfluoroalkylpyrazoles, synth by reaction of β-perfluoroalkyl-β-dicarbonyls with hydrazonyl halides and halooximes, 8827
3-phenyl-5-(2-pyridyl)isoxazole by photoinduced ring transformation of pyrido[1,2-*b*]pyridazinium-4-olate, 4699

Isoxazolidines
5-benzoyl substituted isoaxazolidines by 1,3-dipolar cycloadditions of pyrroline *N*-oxide and tetrahydropyridine *N*-oxide to phenyl vinyl ketone, 12713
bicyclic cyano-substituted isoxazolidines, synth and effects of configuration and *N*-substitution on the formation of β-lactams from, 3943
2',3'-deoxy-2'- or 3'-C_2-branched- or 2',3'-α-fused-isoxazolidine nucleosides, synth directly from seconucleoside, 5279
from cycloaddition of acyclic nitrones with dimethyl fumarate, 7417
2'- or 3'-isomeric 4(7)-substituted isoxazolidine-nucleosides from 2'- and 3'-hypermodified tricyclic nucleosides, 4921
isoxazolidin-5-ones, synth from L-serine and use in synth of β-amino-alanines and β-(*N*-hydroxyamino)-alanines, 5049

Isoxazolines
2-isoxazolines by cycloaddition of nitrile oxides to β-substituted-αβ-unsaturated aldehyde equivalents, 7969

Ketals
see Acetals

Ketenes
dialkyl substituted trimethylsilyl ketene acetals, reaction with aldonolactones, dimerisation of aldonolactones, 11885
haloketenes, [4+2] cycloaddition reactions with 1,3-diaza-1,3-butadienes, synth of pyrimidones, 7579
ketenimines, synth from iminophosphoranes and intramolecular Diels-Alder cycloaddition to benz[*f*]indoles, 5027
methyl (3-benzoylphenyl) ketene, addition of pantolactone to – in asymmetric synth of 2-(3-benzoylphenyl) propionic acid (ketoprofen), 6875
α-oxoketene acetals by reaction of 2,2-difluorovinyl ketones with heteroatom nucleophiles such as thiols, alcohols and amines, 11637
silyl ketene acetals, aldolisation reactions with lactone carbonyls mediated by fluoride, 3333
N-silyl ketene *N,O*-acetals generated from allyl *N*-phenylimidates, Claisen rearrangement of – to yield γ,δ-unsaturated anilides, 3951

Keto-acids, -esters
chiral lithioenamines derived from α-alkyl β-keto esters, asymmetric Michael reaction of, 13081
α-ketoesters, aldol reaction with α-alkoxy silyl enol ethers, synth of diastereomers including the α-alkoxy-β-hydroxy-β-methyl(phenyl) units, 9629
β-ketoesters, lipase-catalysed aminolysis and ammonolysis of–, synth of optically active β-ketoamides, 6935

Ketones
alkyl vinyl ketone, tandem reaction with azides, synth of spiropyrazolines, 12133
1-amino-1-phenyl-3-(2-pyridyl)prop-1-en-3-one by photoinduced ring transformation of pyrido[1,2-*b*]pyridazinium-4-olate, 4699
β-aminoketones by reduction of enaminones, 2255
asymmetric hydrogen-transfer reduction of – with isopropanol catalysed by ruthenium complexes with chiral Schiff base ligands, 4347
asymmetric reductive amination of – *via* highly enantioselective DuPHOS-Rh-catalysed hydrogenation of the C=N double bond, 4399
benzophenones, addition reaction with *gem*-dichloroallyl lithium in the presence of macrocyclic ligands, synth of chloro oxiranes, 8169
bicyclic α-hydroxy ketones by Rubottom oxidation of bicyclic silyl enol ethers, 12903
by Lewis acid-promoted selective rearrangement of trisubstituted epoxides, 3663
carbonyl-protected γ-lithioketones from bis(phenylthio)acetals involving reductive lithiation, 11569

catalytic asymmetric reductive amination of – *via* highly enantioselective hydrogenation of the C=N double bond, 4399
α-chloro-α-chlorosulfenyl ketones, conversion to 3,3-dichloro- and 3-chlorochroman-4-ones and thiochroman-4-ones, 5245
congested α-(*O*-nitrophenyl)ketones, reaction with tris(dimethylamino)-methane, synth of 6,11b-methanopyrrolo-[2,3-*e*][1]benzazocine, 9769
cyanoketones and *N*-cyanoamines, fate of the cyano group in the reduction of, 8203
2,2-difluorovinyl ketones, reaction with heteroatom nucleophiles such as thiols, alcohols and amines, synth of α-oxoketene acetals, 11637
dihydroxyacetone, dimers of–; solution and crystal structure of stereoisomers of 2,5-diethoxy-1,4-dioxane-2,5-dimethanol, 10055
diketones and methylene-ketones, origin of transannular interactions as detected by ^{13}C NMR spectroscopy, *ab initio* MO study, 10813
5,5-dimethyl-7-methoxy-4-oxatricyclo-[4.3.1.$0^{3,7}$]decan-2-one, the heterocyclic ring system of morellin, synth, 2599
enaminoketones prepared from halogeno anilines and carbonyl derivs, $NaNH_2$-t-BuONa promoted arynic cyclisation of, synth of indoles, 11903
fluorinated β-diketones, yeast reductions of – in synth of corresponding ketols, stereochemistry of, 11995
α-fluoroketones, synth based on palladium-catalysed decarboxylation reactions of allyl β-keto carboxylates, 487
from reaction of acyclic 1,6-diol with 85% phosphoric acid, mechanism, 7307
β-hydroxy ketones by palladium catalysed asymmetric 1,4-disilylation of αβ-unsaturated ketones, 335
α-hydroxy ketones and derivs, steric course of baker's yeast reduction, 10539
2'-hydroxyacetophenone, conversion into chroman-4-ones for use in synth of 4-bromo- 2*H*-chromenes and 2*H*-thiochromenes, 2507
β-hydroxyketones, cyanide addition to–, synth of *syn* β-hydroxycyanohydrins and *anti* 2,4-dihydroxyamides, 8169
β-ionone oxides and α-pinene, aminium salt catalysed rearrangement of, synth of 1-(1,2,2-trimethylcyclopent-1-yl)-pent-2-en-1,4-dione, 9097
ketone enolates, electrophilic α-*p*-tolylhydrazonylation with t-butyl *p*-tolylazo sulfide, synth of 2-oxohydrazones, 11239
α-monosulfenylated ketones by treatment of α,α-dibromomethyl ketones with sodium thiolates, 12349
münchnones, intermolecular 1,3-dipolar cycloadditions with acetylenic dipolarophiles, regioselectivity, 93
γ'- and ε-nitro-β-enaminoketones by reaction of dianions of acyclic β-(monoalkylamino)-αβ-unsaturated ketones with nitroalkenes, subsequent conversion to dihydropyrroles, 9831
octahydro-7-(3-oxocyclobutylidene]-1,6:3,4-dimethanocyclobuta[1,2:3,4]dicyclopentene-2,5-dione, synth as a precursor to spherical hydrocarbon *p*-[$4^2.5^8$]decahedrane, 4949
octalone and hydrindenone, chemobiological transformations using *Rhizopus arrhizus* ATCC 11145, 8399
2-oxoindolin-3-ylidene ketones, isomerisation from (*E*)- to (*Z*)-, 10955
α-(phenylselenyl)ketones, evidence for a common selenolate intermediate in the glutathione peroxidase-like catalysis of - and diphenyl diselenide, 2929
photochemically excited dihydroxy acetone in 1,2-dimethoxy ethane, reaction with diethyl phosphoric acid, synth of glycerol-2-diethyl phosphate, 3743
reactions with methyl methacylate in the presence of lithium hexamethyldisilamide, tandem syntheses of cyclohexane derivs *via* sequential Michael-Michael-aldol reactions, 9061
selective hydrogenation of carbon-carbon double bond of αβ-unsaturated ketones with Pd/C using limonene as the hydrogen source, 973
sodium salts of 2-(hydroxymethylene)-1-cycloalkanones, reaction with cyanothioacetamide, synth of 2,4-diaminopyrido-[2,3-*d*]pyridines, 199
tetracyclic ketone core of phorbol tumour promoter, synth by condensation of an

optically pure carenyl anion with 2-chlorocyclohexanone, 4071
α-tetrasubstituted arylketones, photoreactivity of, synth of arylenols, 2849
trifluoromethyl ketones, synth through lithium-iodine exchange reaction, 12673
trifluoromethylalkenylketones by perfluoroacylation of alkenes with trifluoroacetic anhydride, 11023
3-unsubstituted-2-indolinones by Nafion-H catalysed cyclisation of α-carbomethoxy-α-diazoacetanilides, 609
see also the individual Cyclic ketones, Chalcones, Dienones, Enones

Kinetics
N-, *C*- and *S*-mannopyranosyl derivs as potential inhibitors of jackbean α-mannosidase, 6965
acid-base equilibria and decomposition of secondary (N-Cl)-α-amino acids, 10509
alkylations of 2-substituted-4-methylbenzimidazoles, 5535
configurational stability of chiral organolithium compds on the time scale of their addition to aldehydes, 6049
counterion effect on stereochemistry of reduction of cycloalkanones by alkali metals in ammonia, 3149
degree of intracluster etheration and reactivity of *sec*-butyllithium towards ethylene, 5933
for rearrangement of *N*-(5-phenyl-1,2,4-oxadiazol-3-yl)-*N'*-arylformamidines into 1-aryl-3-benzoylamino-1,2,4-triazoles, 7315
kinetic equations for solid state reactions, 6441
kinetic formation of dirithromycin and epi-dirithromycin, conformational analysis, 3857
kinetic resolution of 5-alkoxy-2(5*H*)-furanones using a chiral aminoalcohol catalysed 1,4-addition of arylthiols, 4775
kinetic study of alkoxide-promoted decomposition of *N*-halo derivs of glycine and sarcosine in aqueous media, 2265
kinetic study of the uncatalysed methanolysis of furyl-2-oxirane, 5555
kinetic vs. thermodynamic control and steric hindrance in allylation of 3-hydroxyisoxazole, 5-isoxazolone and 5-pyrazolone systems, 515
mechanism of alcohol oxidations by anionic peroxomolybdenum complexes, 5119
and mechanism of oxidation of *S*-phenylthioacetic acid by Ce(IV), 13731
and mechanism of oxidation of some substituted *trans*-cinnamic acids by pyridinium chlorochromate and by chloramine-T, a non-linear Hammett plot, 10933, 10945
photoredox reactions of polypyridyl chromium(III) complexes with arylthioacetic acids in acetonitrile and aqueous media, 9447
rate of esterification of polyhydroxylated steroids by *Candida antarctica* lipase B, 13165
rates of Diels-Alder reactions when using 4-hydroxycyclopent-2-en-1-one and derivs as chiral synthetic equivalents of cyclopentadienone, 8515
rates of photochemical reactions of 9,10-anthracenedicarbonitrile and 1,4-naphthalenedicarbonitrile in acetonitrile in the presence of bases, 2115
reaction rates for reaction of 2-(4-nitrophenoxy)quinoxaline with hydroxide ion in micellar systems, 1927
reactivity of 2-(lithiomethylene)-1,1,3,3-tetramethylindane, 5845
relative rates of fluoroalkylation of 1-phenylbenzocycloalkenes with cesium fluoroxysulfate, 12235
relative rates of hydrogen-abstraction from eleven-substituted iso-propylbenzenes by bromine atoms, 7503
selective catalytic hydrogenation in the presence of lanthanide *tris*-β-diketonates as protecting agents; correlation between constants of equilibrium in reaction mixture and protecting activity of the complexes, 6921
solution conformation of hexameric and heptameric lariat-RNA's and their self-cleavage reactions, 1777
solvent effects on lipase-catalysed trans-esterifications of *cis*- and *trans*-4-methylcyclohexanols, 4681
solvent effects on rate of ene reactions of diethylazodicarboxylate and triazolidinone, 1821
stereoisomerism in *N*-cyano-*O*-

phenylisoureas and related compds, 12211
studies of the nucleophilic quenching of photoexcited nitroaryl ethers (NArE) by bromide ions in cationic micellar solution, 3071
substituent effects on the mechanism of oxidation of amino acids by peroxomonosulfate, 9495
and synthetic studies of substituent effects in the furan intramolecular Diels-Alder reaction, 6767
temperature dependence of diastereoselective reduction of 2-t-butylcyclohexanone with diisobutylaluminium-2,6-di-t-butyl-4-methylphenoxide, 6819

Labelling
addition of labelled sodium acetate to cultures of dinoflagellate from *Prorocentrum lima* in order to study the biosynthetic origin, 9175
^{18}O-labelling experiment to study the formation of the 5-iodopentyl formate in the photolysis of cyclopentanol hypoiodite in the presence of mercury(II) oxide-iodine, 13101
[3'-^{13}C]-(*R*)-(−)-pindolol, effective β-blocker, synth utilising a lanthanum-lithium-(*R*)-BINOL catalysed nitroaldol reaction, 12313
protein kinase labelling by photoactivatable (*Z*)-18-[4-[3(trifluoromethyl)diazirinyl]phenyl]-9-octadecenoic acid, 3785

Lactams
convolutamides A-F, γ-lactam alkaloids from the marine bryozoan *Amathia convoluta*, structures, 10201
from bicyclic cyano-substituted isoxazolidines, 3943
fused γ-lactams by intramoleclar nitrone cycloaddition, 5503
δ-lactams from pentacyclo-[5.4.0.0^{2,6}.0^{3,10}.0^{5,9}]undecane-8,11-dione, influence of reaction conditions, 10783
δ-lactams substituted at C-5 by an oxygen atom, conformational analysis, 7947
3-mono and disubstituted lactams, synth using Meerwein Eschenmoser [3,3] sigmatropic rearrangements involving methoxymethyleniminium salts and lithium alkoxides derived from allyl alcohols, 4025
cis monobactams through electrophilic amination of chiral 3-hydroxyesters, 11967, 11983
pyrano- and furano- sugar lactams from the corresponding sugar lactones, 4215
reaction with 1,2-diamines, cysteamine or 2-aminothiophenol, synth of chiral 1,4-diaxepinones and 1,4-thiazepinones, 10701
substituted α-methylene lactams by rhodium catalysed carbonylation of acetylenic amines, 2533
for β-lactams *see* Azetidinones

Lactones
aldonolactones, diastereoselective dimerisation of − by tris(dimethylamido)sulfonium difluorotrimethylsilicate mediated reaction with dialkyl substituted trimethylsilyl ketene acetals, 11885
α-alkylidene lactones from β,γ-unsaturated esters by treatment with TMS-I, 13687
α-alkylidene-γ-butyrolactone β-acetic acid derivs by palladium catalysed cyclisation-carbonylation of allylic 2-alkynoates, 9067
(+)-altholactone, *cis*-fused tetrahydrofurano-2-pyrone from *Polyalthia* and *Goniothalamus giganteus*, total synth from diethyl L-tartrate, 11315
(+)-altholactone and its three isomers, synth from D-gulonolactone and D-mannose, 8685
β-angelica lactone, bromination of−, synth of 3-bromo-5-methylene- and 3-bromo-5-methyl-2(5*H*)-furanones, 12457
(+)-blastmycinone, (−)-3-*epi*-blastmycinone and (+)-(3*R*,4*R*,5*R*)-4-acetoxy-5-methyl-3-tetradecyltetrahydro-2(5*H*)-furanone, synth from tetronic acid derivs, 8337
botcinolide, a new phytotoxic trihydroxylated nona-lactone esterified with 4-hydroxy-2-octenoic acid, a metabolite of the mould *Botrytis cinerea*, structure, 11585
conformationally restricted relatives of

mevinic acids, synth by condensations between tricyclic ketones and the sodiolithio dianion of methyl acetoacetate, 5147
didemnilactones A and B and neodidemnilactone, fatty acid metabolites from tunicate *Didemnum moseleyi* (Herdman), structures and biological activities, 7385
dihydro-β-campholenolactone, hydroxylation of − by fungus *Fusarium culmorum*, 10339
6β-eudesmanolides and 6b-guaianolides from 6α-eudesmanolides, synth of analogues of artepaulin, colartin and tannunolide D, 2917
fluoride mediated reactions of − with silyl ketene acetals, 3333
3-(1-hydroxyalkyl)-5*H*-furan-2-ones, synth and reactions with halogens as possible route to fimbrolides, 4201
(*Z*)-iodoalkylidene lactones by photoisomerisation of (*E*)-iodoalkylidene lactones, 2161
medium ring keto-lactones by oxidative cyclisation of homoallyl alcohols under heterogeneous permanganate oxidation conditions, 11709
medium-sized lactones by the copper(I)-chloride/2,2'-bipyridine catalysed cyclisation of di- and trichloroacetates, 12415
(−)-2-*C*-methyl-D-erythrono-1,4-lactone and (+)-2-*C*-methyl-L-threono-1,4-lactone, synth, 9629
γ-methylene-γ-butyrolactone, relative thermodynaic stabilities, 1885
(+)-muconolactone from arene biotransformation in *Pseudomonas putida*, production, absolute configuration and enantiomeric purity, 3587
picrodendrins U-W, norditerpene lactones from the bark of *Picrodendron baccatum*, structure, 10859
spiroanellated carbohydrate-derived α-methylene-γ-butyrolactones and α-alkylidene-γ-butyrolactones, synth by Dreiding-Schmidt reactions, 1111
α-substituted acrylates and α-(methylene)lactones, Diels-Alder reactions of − to examine correlation of conformation of dienophiles and *endo-/exo* selectivity, 10839
substituted alkylidene lactones by reaction of iodoalkylidene lactones with nucleophiles, 3557
sugar δ-enlactones, addition of *N*-benzylhydrazine to −, stereo- and regiochemistry of, 7219
sugar lactones, conversion into the corresponding pyrano- and furano- sugar lactams, 4215
withajardins A, B, C and D, steroid lactones from leaves of *Deprea orinocensis*, structure and absolute configuration, 1217
(*Z*)- and (*E*)-α-ylidene-γ-butyrolactones from cross-coupling between organostannanes and organic halides, 12029
see also Furanones, Macrolides

Lanthanides and compds
lanthanide(III) trifluoromethanesulfonates, synth of both enantiomers and use as catalysts in asymmetric Diels-Alder reactions, 11623
lanthanum *tris*-β-diketonates for carbonyl group protection in hydrogenation, 6921
lanthanum-lithium-(*R*)-BINOL as catalyst for nitoaldol reaction in synth of (*S*)-(−)-pindolol and [3'-^{13}C]-(*R*)-(−)-pindolol, 12313
see also Cerium, Samarium, and compds

Lignans
aryltetralins from the non phenolic oxidative coupling of diarylbutanes using ruthenium(IV) dioxide dihydrate; conformational studies of deoxy-schizandrins, 1153
lignan and chalcone glucosides from the roots of *Pyracantha coccinea*, structures, 5181
lignans and neolignans from stems of *Piper wightii*, 10579
metasequirin B, a norcycloneolignan, synth of furano bisbenzocycloheptene, a 5,8-bis-epimer of the tetra-*O*-methyl deriv of-, 3363
salicifoline, isosalicifoline and (−)-epinortrachelogenin, benzylidene-benzyl-γ-butyrolactone-type lignans from leaves of *Bupleurum salicifolium*, structures, 5203
two new neolignans from stems and fruits of *Piper wightii*, structures, 2231, corrig. 6721

Limonoids
carapolides C-I and evodoulone from extracts of seeds of *Carapa grandiflora* (Meliaceae), structures, 9343
seco-limonoids, potent new cell adhesion inhibitory compds from the root of *Trichilia rubra*, structure, 11369
Lipids
lipid peroxidation product, 4-hydroxynon-2-enal, and its C_5-analogue 4-hydroxypent-2-enal, synth and stereoanalysis, 10245
methods for removal and oxidation of the lipid moiety of moenomycin A, 5299
see also Glycolipids
Lithiation
alkyllithium reagent reactions with trifluoromethylpyridines, directing effects of the trifluoromethyl group, 12259
aromatic –, mechanisms, influence of aggregation and directing groups, 5903
benzotriazole-assisted β-lithiation of (α-benzotriazolylvinyl)ethers, PM3 and MNDO calculations, 6005
di– of 2-(chloromethyl)-3-tosylpropene with n-butyllithium, synth of a new γ-chlorinated allyl sulfone dianion for organic synthesis, 3491
of dialkyl sulfates by naphthalene catalysed -, synth of alkyllithium reagents, 3427
of 1,4-dichlorobut-2-enes and 3,4-dichlorobut-1-ene catalysed by arenes, reaction with electrophiles, 7857
DTBB-catalysed lithiation of trialkyl phosphates, synth of organolithium compds, 8551
lithiated diallyl ethers, influence of the geometry of the carbanionic moiety on the non-induced diastereoselectivity of [2,3]-Wittig rearrangement of–, 3687
metalation properties of methyl *N*-methyl- and methyl *N*-(2,4,6-trimethyl)phenyl-2-carboximidates of thiophene and furan, 4149
reductive – of bishomoallyl phenyl sulfides, synth and rearrangements of bishomoallyllithiums, 12793
reductive – of bis(phenylthio)acetals, synth of γ-(phenylthio)ketones, 11569
for reductive cleavage of allylic ketals, synth of masked lithium homoenolates, 3437
reductive decyanation of nitriles with lithium and 4,4'-di-t-butyl-biphenyl in a Barbier-type reaction, synth of organolithium reagents, 3447
reductive metalation of benzylidenecyclopropane derivs with lithium metal, regioselective carbon-carbon σ-bond scission followed by 1,6-proton shift, 2439
reductive opening of azetidines with lithium, synth of 3,*N*-dilithioalkylamines, 5775
Lithium and compds
ab initio study of the monomer-dimer equilibrium in lithium and sodium *gem*-dichloro allyl and methyl systems, 12511
addition of lithium metal to cyclic and acyclic alkynes, synth of vicinal dilithioalkenes, 8019
(9-alkyl-9-fluorenyl)-methyllithium (or cesium) and 2,2-diphenyl-3,3-dimethylbutyllithium, rearrangements of, 5971
alkyllithium reagents, addition to aldehydes induced by chiral lithium alkoxides, 6109
alkyllithiums, reaction with ω-alkenyl benzylselenides, synth of arylcycloalkanes, 7177
aracemic 2-lithio-*N*-methylpiperidine and 2-lithio-*N*-methylpyrrolidine as configurationally stable α-amino organolithiums, synth, 6077
aryllithium compds, electron transfer in their reactions with carbon monoxide, 4651
bishomoallyllithiums, synth by reductive lithiation of bishomoallyl phenyl sulfides, rearrangements and synthetic uses, 12793
bromine-lithium exchange of 3,3'-dibromostilbene with one equivalent of n-butyllithium, s-butyllithium or t-butyllithium, synth of 3-bromostilbene and stilbene, 5999
sec-butyllithium and 3-methoxypropyllithium, degree of intracluster etheration and reactivity of *sec*-butyllithium towards ethylene, 5933
butyllithium, phenyllithium and lithium diisopropylamide, aggregation behaviour in dimethoxy- and diethoxymethane, 5861

butyllithium *versus* the superbase mixture of butyllithium with potassium t-butoxide for the metalation of alkyl(alkylthio)-benzenes, 6037
chiral lithioenamines derived from α-alkyl β-keto esters, asymmetric Michael reaction of, 13081
configurational stability of α-bromo-, α-phenylseleno- and α-phenylthio-alkyllithium on the time scale of their addition to aldehydes, 6049
1,11-dilithio-5,5,7,7-tetramethyl-5,7-dihydrodibenz[*c,e*]oxepin, a conformationally confined analogue of *o,o'*-dilithiobiphenyl, NMR study of intramolecular aggregation, 5881
enantio-defined α-alkoxyalkyllithiums, [1,2]-Wittig rearrangement of–, structural requirements and steric course at the lithium bearing terminus, 5927
enantioenriched α-oxy-α-methylbenzyllithium, generation from (*R*)- or (*S*)-1-phenylethyl *N,N*-diisopropylcarbamate, stereodivergence of its electrophilic substitution, 6097
lithio α-amino carbanions, configurationally stable, synth, 6077, 6089
lithio derivs of two sets of isomeric 3-thia[3.2.1]octane-3-oxides, stereochemistry of the reaction with electrophiles, 6061
2-lithio-1,3-dithiane and 2-triorganosilyl-, 2-t-butyl- and 2-phenyl-2-lithiodithianes, solution ion pair structure by NMR, 5869
lithio-diazomethane and lithio-(trimethylsilyl)diazomethane, theoretical and experimental studies of their structures, reactions and reaction products, 5889
lithioalkyl allyl ethers, Wittig rearrangement of–, exhibition of different *cis, trans*-selectivities than [2,3] shifts in their lithiomethyl analogues, 13417
2-(lithiomethylene)-1,1,3,3-tetramethylindane; a β,β-shielded vinyllithium example for a quantification of structure, monomer-dimer equilibrium and some reactivity parameters, 5845
lithium powder, reaction with 1,3-dichloropropene, synth of unsaturated 1,5-diols, 13269
Michael-Dieckmann addition of lithium dienediolates of carboxylic acids to the lithium salts of carboxylic acids, synth of cyclohexenones and polycyclic ketones, 2571
mixed *sec*-butyllithium and potassium t-butoxide (LICKOR), reaction of 1,1-diethoxybut-2-ene with electrophiles in the presence of –, synth of 1-substituted 1-ethoxy dienes, 12463
organolithiums, asymmetric 1,2-addition of – to aldimines catalysed by chiral amino ether, 4429
stannylpyrimidines in coupling and tin-lithium exchange reactions, 275
terminally substituted 5-hexenyllithiums, anionic cyclisation of, 5957
tosylated lithium 2-(lithiomethyl)-2-propen-1-olate, a γ-alkoxide allyl sulfone anion for regioselective alkylation at the α-position with alkyl halides, aldehydes and αβ-unsaturated carbonyl compds, 6603
β,β,β-trialkoxyethyllithium, a carboxyl protected acetic acid dianion equivalent, stable towards fragmentation, synth and reactivity, 8099

Luminescence, *see* Fluorescence

Macrocycles
addition reactions of *gem*-dichloroallyl lithium to benzophenones in the presence of macrocyclic ligands, synth of chloro oxiranes, 8169
furan macrocycles, conversion to acenaphanes, 9113
1,4,7,10,13,16,19-heptathiaheneicosane (21-S-7) and 1,4,7,10,13,16,19,22-octathiatetraeicosane (24-S-8), macrocyclic thiocrown ethers, synth, 2095
macrocyclic crown-formazans, synth by azo coupling of bis-diazonium salts with pyruvic and arylpyruvic acids, 11489
see also Macrolides

Macrolides
FK 506 from *Streptomyces tsukubaensis* 9993, prep of des-28-(cyclohexyl)methylene-28-oxo-ascomycin, chemoselective removal of the cyclohexyl residue of ascomycin, 13655
theonezolides B and C, macrolides with various functionalities from Okinawan

sponge *Theonella* sp., structures, 8355
Magnesium and compds
secondary halogen magnesioamides, reaction with 2-methyl-1,3-dioxep-4-ene, synth of 4-aminobut-2-enols and 2-aminobut-3-enols, 12953
see also Grignard reactions/reagents
Manganese and compds
dimeric manganese(III)-tetraarylporphyrins as catalysts for H_2O_2-promoted olefin epoxidation, 9025
manganese *meso*-tetra(4-sulfonatophenyl)-porphine, synth of a tumour-selective magnetic resonance imaging contrast agent, 8657
manganese(III) and cerium(IV) oxidations of substituted naphthalenes, rearrangements in - and the NIH shift mechanism, 3575
(salen)manganese(III) complex bearing *p*-(t-butyl)phenyl or binaphthyl groups, synth as catalysts for the epoxidation of *cis*-olefins, 4311
(salen)manganese(III) complex as catalyst for asymmetric epoxidation of conjugated *cis*-olefins, 11827
(salen)manganese(III) complexes as catalysts for the catalytic asymmetric oxidation of sulfides, 9609
Marine metabolites
(+)-(3*R*,4*R*,5*R*)-4-acetoxy-5-methyl-3-tetra decyltetrahydro-2(5*H*)-furanone from Gorgonian coral *Plexaura flava*, synth from tetronic acid derivs, 8337
agelasphins, antitumour and immunostimulatory cerebrosides from the marine sponge *Agelas mauritianus*, structures and synth of AGL-9a, 2771
aplysinopsin alkaloids of marine origin, synth by iminophosphorane mediated imidazole ring formation, 2241
bastadins, alkaloids from marine sponges *Ianthella basta* and *Ianthella flabelliformis*, evaluation as inosine 5'-phosphate dehydrogenase (IMPDH), 7367
biosynthesis of plant pheromones from marine brown algae phaeophyte *Cutleria multifada*, evidence for a spontaneous [1.7]-hydrogen shift and an 8πe electrocyclic ring closure, 10235
briarane and asbestinane diterpenes from corals of *Briareum asbestinum*, structures, 1983
bromotyrosine metabolites from marine sponge *Psammaplysilla purpurea*, structure, 12009, corrig. 12783
(−)-$\Delta^{9(12)}$-capnellene, from soft coral *Capnella imbricata*, synth from (−)-2-methyl-4-trimethylsilyl-2-cyclopenten-1-one, 655
(±)$\Delta^{9(12)}$capnellene, triquinane marine sesquiterpene, total synth using a palladium-catalysed bis-cyclisation step, 403
ciguatera and its off-shoots; research into molecular structure, 3
ciguatoxin, synth of pyran subunits of marine *trans*-fused polyether toxins, epimerisation of alkynyl sugars through cobalt complexes, 5633
convolutamides A-F, γ-lactam alkaloids from the marine bryozoan *Amathia convoluta*, structures, 10201
cyclolinteinone, sesterterpene from *Cacospongia* cf. *linteiformis*, structure and absolute stereochemistry of, 13469
didemnilactones A and B and neodidemnilactone, fatty acid metabolites from tunicate *Didemnum moseleyi* (Herdman), structures and biological activities, 7385
3,4-dihydroxystyrene dimers, inducers of larval metamorphosis in ascidians from marine sponge *Jaspis* sp., 13583
dinoflagellate *Prorocentrum lima* responsible for diarrhetic shellfish poisoning (DSP); isolation, structure and biosynthetic origin of two ester derivs of okadaic acid from −, 9175
discodermins F-H, cytotoxic and antimicrobial tetradecapeptides from the marine sponge *Discodermia kiiensis*, structure revision of discodermins A-D, 13409
discorhabdin C, batzelline C and isobatzelline C, pyrroloquinoline alkaloids, synth and cytotoxic study of intermediates, 2017
dolabellanes, diterpenes from brown alga *Dictyota pardalis* f. *pseudohamata*, structures, 8011
dolastatin 15 from *Dolabella auricularia*, synth and anticancer activity, 12097
dolastatine 10 and [*R*-Doe]-dolastatine 10

from marine mollusc *Dolabella auricularia*, synth, 5345
doliculide, cytotoxic cyclodepsipeptide from the Japanese sea hare *Dolabella auricularia*, total synth, 12853
dl-duocarmycin, its 2-epimer, (+)-duocarmycin A and its three isomers, antitumour antibiotics from *Streptomyces* sp., synth and cytotoxic activity against P388 murine leukemia, 2793, 2809
erylusamines A-E from marine sponge *Erylus placenta*, isolation as interleukin-6 receptor antagonists, structure, 1105
(±)-euryfuran, alternative synthetic approaches to – *via* the furan ring transfer reaction, 5645
eurypongiols, ten new hydroxylated 9,11-secosteroids with antihistaminic activity from the sponge *Eurypongia* sp., stereochemistry and reduction, 3813
fimbrolides, reaction of 3-(1-hydroxyalkyl)-5*H*-furan-2-ones with halogens as possible route to fimbrolides, 4201
furanosesquiterpenes from *Dysidea herbacea*, configurational analysis, absolute stereochemistry, 3879
hapaioside, 4-hydroxy-6-oxopregnane-3-glycoside from Pohnpei sponge *Cribrochalina olemda*, structure, 12593
helioxenicins A-C, diterpenes from the blue coral *Heliopora coerulea*, structures, 9989
12-hydroxyambliofuran, 12-acetoxyambliofuran, five tetracyclic furanoditerpenes and a furanosesterterpene from Western Australian sponge *Spongia* sp., structures, 9893
hymenamides G-K, cyclic octapeptides from Okinawan marine sponge *Hymeniacidon* sp., structure and Edman degradation, 4667
ingamines A and B, cytotoxic alkaloids from the marine sponge *Xestospongia ingens*, structures, 6137
ircinols A and B, antipodes of manzamine-related alkaloids from Okinawan sponge *Amphimedon* sp., structures, 7957
isotactic nonamethoxy-1-pentacosene from blue-green alga *Scytonema ocellatum*, synth and absolute configuration, 11133
kalihinol and kalihinene diterpenes from the sponge *Acanthella cavernosa*, structure, 11079
lintenolides, pentacyclic bioactive sesquiterpenes from the Caribbean sponge *Cacospongia* cf. *linteiformis*, structure, 849
lissoclinotoxins, antibiotic polysulfur derivs from the tunicate *Lissoclinum perforatum*, revised structure of lissoclinotoxin A, 5323
makaluvamines A-E, cytotoxic pyrroloiminoquinone alkaloids from marine sponge *Zyzza* cf. *marsailis* and *Histodermella* sp., inhibitory activity against topoisomerase II, 13593
manoalide, sesquiterpenoid phospholipase A_2 inhibitor from Pacific sponge *Luffariella variablis*, synth *via* heteroatom-assisted alkyne carbometalation, 8793
millecrone A and B, millecrol A and B, four sesquiterpenes from the South African nudibranch *Leminda millecra*, isolation and structure, 3065
monodontamides A-F from the marine gastropod mollusc *Monodonta labio* (Linné), structures, 6805
nakijiquinones A and B, antifungal sesquiterpenoid quinones with an amino acid residue, isolation from Okinawan sponge *Spongiidae*, structures, 8347
paniceins and renierins from the sponge *Reniera mucosa*, structure and cytotoxicity, 8153
petroformynes, high molecular polyacetylenes from the marine sponge *Petrosia ficiformis*, absolute stereochemistry, 13261
peyssonol A and B and hyatellaquinone, sesquiterpene hydroquinones from the alga *Peyssonnelia* sp. and *Hyatella intestinalis* sp., structures, 4179
phloeodictines A1-7 and C1-2, antibiotic and cytotoxic guanidine alkaloids from the New Caledonian sponge *Phloeodictyon* sp., structures, 3415
pseudopterolide, diterpenoid derived from the Red Sea whip *Pseudopterogorgia acerosa*, potential implications for its biological activity, 9223
reidispongiolide A and B, potent cytotoxic macrolides from New Caledonian sponge *Reidispongia coerulea*, structure, 4829
shimofuridins B-G, nucleoside deriv cont-

aining an acylfucopyranoside moiety from the Okinawan marine tunicate *Aplidium multiplicatum*, isolation and structure, 8651
(+)-stoechospermol and (+)-spatol, spatane diterpenes from brown algae of the south Pacific, total synth, 12829, 12843
(±)-surugatoxin and neosurugatoxin from toxic ivory shell *Babylonia japonica*, total synth, 2729, 2753
1,2,3,4-tetrahydro-8-hydroxymanzamines, sponge alkaloids from Papua New Guinea sponges *Petrosia* and *Cribochalina*, isolation and characterisation, 13567
theonezolides B and C, macrolides with various functionalities from Okinawan sponge *Theonella* sp., structures, 8355
topsentiasterol sulfates A-E, antimicrobial sterol sulfates from marine sponge *Topsentia* sp., structures, 7765
upial, marine sesquiterpene from *Dysidea fragilis* sp., total synth from D-mannitol, 661
variolin A and B and *N*(3')-methyl tetrahydrovariolin B from Antarctic sponge *Kirkpatrickia varialosa*, structures, 3987, 3993
verongida sponges, *Pseudoceratina crassa*, chemical characterization, 783
zoanthamine alkaloids from a marine zoanthid of genus *Zoanthus*, synthetic approach to C11-C20 fragment from (−)-perillyl alcohol, 9135

Mass spectra
alkylbis(2,6-dimethyl-4-methoxyphenyl)boranes, 13775, 13801
chrysomelidial and plagiodial, defensive iridoid monoterpenes in larvae of leaf beetles, 6859
convolutamides A-F, γ-lactam alkaloids from the marine bryozoan *Amathia convoluta*, 10201
data for pregnane glycosides from *Leptadenia reticula* Wight and Arn, 789
diester-calix[4]arenediquinone, complexation studies, 931
FAB, erylusamines A-E from marine sponge *Erylus placenta*, 1105
FAB for structural elucidation of acetogenins from *Uvaria accuminata* (Annonaceae), 8479
mass spectrometer as a probe in the synth of 2-substituted benzimidazoles from *N,N'*-diacyl-1,2-benzenediamines, 2485

Mechanisms
acid-base equilibria and decomposition of secondary (N-Cl)-α-amino acids, 10509
addition of primary alkyl Grignard reagents to carbocyclic and heterocyclic arylketones in the presence of magnesium TADDOLate, 6117
of alcohol oxidations by anionic peroxomolybdenum complexes, 5119
baker's yeast mediated synth of (*R*) *S*-benzyl thioglycerate from D-mannose, D-glucose and D-fructose, 857
catalytic allylic alkylation with palladium complexes of 1-(2-diphenylphosphino-1-naphthyl)isoquinoline, 4493
catalytic intramolecular hydrosilation of silyl ethers derived from allylic alcohols, 4335
copper-catalysed conjugate additions of organozirconocenes to αβ-unsaturated carbonyl groups, 1935
cyclisation of glucal halohydrins to glucal epoxides, effect of the halide on formation, 6783
DABCO catalysed rearrangement of allylic esters, mechanistic and synthetic aspects, 12001
electrochemical investigation of reaction between sodium benzenesulfinate and *p*-halonitrobenzenes, 7889
electrochemical oxidation of dihydroindoloquinazoline and dihydroquinazoline derivs, 12773
electrochemical reduction of pristinamycin I^A and related streptogramins, synth of des-(3-hydroxypicolinoyl)-pristinamycin I^A, 6307
electrochemical reductive coupling of polyhalogenonitrobenzenes, example of radical anion dimerisation, 6913
electron transfer in the reactions of aryllithium compds with carbon monoxide, 4651
electron-transfer photoinduced alkylation of 1,2,4,5-tetracyanobenzene in the presence of tetraalkylsilane or −stannane, scope and mechanism, 6401
enantioselective conjugate addition of

n-butyl to enones using scalemic tetraamines (DIMAPP ligands) as chiral cuprate ligands, 4455
Ferrier reaction, studies of – by using (*E*)-selectively deuterated methyl[6-^{2}H]-2,3,4-tri-*O*-benzyl-α-D-*xylo*-hex-5-enopyranoside, 4125
of formation of the 5-iodopentyl formate in the photolysis of cyclopentanol hypoiodite in the presence of mercury(II) oxide-iodine, 13101
functionalization of saturated hydrocarbons, use of t-butyl hydroperoxide as oxidant in Gif-type systems, 19, 31
geminal diGrignard reagents by reaction of geminal dihalides with magnesium and sodium, mechanism, 5945
halogen migration during metalation of pyrimidines, unusual halogen-lithium exchange with LTMP, synth of Leshmaniacides, 10299
1,5-hydrogen atom transfer in monocyclic analogue of neocarzinostatin chromophore relevant to mechanism and cleavage selectivity of diyl based DNA cleaving agents, 1419
hydrogen peroxide-acetic acid oxidation of ursolic acid and related compds, 11459
hydrogen transfer – for reaction of aromatic compds with methyllithium, influence of aggregation and directing groups, 5903
for the inhibition reactions of dipeptide and tetrapeptide analogues based on 1-aminocyclopropane carboxylic acids, 9729
introduction of nitriles into heterocycles and conversion of carboxylic groups into their corresponding nitriles with chlorosulfonylisocyanate and triethylamine, 6549
ionic substitution reactions in GoAgg^{IV} chemistry, formation of C-Hal, C-N, C-S and C-C bonds, 31, 47
kinetic study of the uncatalysed methanolysis of furyl-2-oxirane, 5555
and kinetics of oxidation of some substituted *trans*-cinnamic acids by pyridinium chlorochromate and by chloramine-T, a non-linear Hammett plot, 10933, 10945
lithiation of 1,4-dichlorobut-2-enes and 3,4-dichlorobut-1-ene catalysed by arenes, reaction with electrophiles, 7857
lithium and zincate carbenoids by bromine/lithium and bromine/zinc exchange reactions of *gem*-dibromo compds, stereochemistry, 7987
mechanism of diastereoselection in photosensitised [2+2]-cycloaddition reaction of ethylene to 5-alkoxy-2(5*H*)-furanones, 11167
mechanism and kinetics of oxidation of *S*-phenylthioacetic acid by Ce(IV), 13731
mechanistic studies on a designed ribonuclease mimic; self cleavage of C8-histamino-r(UpA) promoted by $ZnCl_2$, 11699
2,4-bis(4-methoxyphenyl)-1,3,2,4-dithiadiphosphetane-2,4-disulfide (Lawesson's reagent) reaction with aromatic dihydroxycompds, synth of 1,3,2-dioxaphospholane-2-sulfide, 6975
of Mitsunobu azide modification, effect of additives on the rate of hydroxyl group activation, 9671
nucleophilic 1,2-addition of bromine to electron deficient double bonds by perbromide reagents, 6433
nucleophilic behaviour of 1,8-diazabicyclo-[5.4.0]undec-7-ene (DBU) and 1,5-diazabicyclo[4.3.0]non-5-ene (DBN) in reactions with 4-halo-3,5-dimethyl-1-nitro-1*H*-pyrazoles, 865
of *ortho–ortho* 2,4-cyclohexadiene-1-one rearrangement of the reaction product of 2,6-di-t-butyl-4-chlorophenol and 2,6-dichlorobenzoquinone *N*-chloroimine, 8809
of oxidation of amino acids by peroxomonosulfate, substituent effects, 9495
oxidation of flavanols by potassium superoxide, synth of acids and aldehydes, mechanism, 9303
palladium-catalysed carbonylation of allylamines, synth of βγ-unsaturated amides, 453
palladium-catalysed dominò coupling reactions of aryl halides with norbornene and norbornene derivs, synth of polycyclic aromatic compds, 383
PET promoted cyclisation of 1-[*N*-alkyl-*N*-(trimethylsilyl)methyl]amines tethered to proximate olefin, synth of pyrrolidines and piperidines, 8185

photochemical reactions of 9,10-anthracenedicarbonitrile and 1,4-naphthalenedicarbonitrile in acetonitrile in the presence of bases, 2115
of photochemically induced oxidation of aniline by hydroperoxides, an electron paramagnetic resonance study, 9511
pyrolysis of esters, substituent effects, 161
pyrolysis of malonanilic acid ethyl esters, synth of symmetric dianilides of malonic acids, 10331
of reaction of acyclic 1,6-diol with 85% phosphoric acid, intramolecular 1,6-hydride transfer, 7307
reactions of aromatic olefins induced by aminium salts, protic-acid or radical cation catalysed process, 12685
rearrangement of 2-(vinyloxy)alkyl to 4-ketobutyl radicals, 12305
rearrangements in the cerium(IV) and manganese(III) oxidations of substituted naphthalenes and the NIH shift mechanism, 3575
rearrangements of 3,3-bis(methylthio)-1-(arylcyclopropyl)-2-propen-1-ols, synth of functionalised cyclopentenes and polyene esters, 255
reduction of *N*-acyl-enamine derivs with a NADH model in the pyrrolo[2,3-*b*]pyridine series, 13135
ring opening of oxetanes using the β-silicon effect as a control, 12319
selective transformation of α,α-dibromomethyl ketones into α-monosulfenylated ketones, 12349
stereoselective synth of vicinal dilithioalkenes by addition of lithium metal to cyclic and acyclic alkynes, 8019
synth of (±)-3-oxovincadifformine ethyl ester, aspidosperma alkaloid, *via* cyclisation of 3-oxosecodine, 6941

Medium-ring carbocycles
tropolones by rhodium(II)-catalysed reactions of vinyldiazomethanes with oxygenated dienes, 9883

Medium-ring heterocycles
medium-ring nitrogen-containing alcohols and related compds, synth and stereochemistry, 13199

Membranes
photosensitive artificial membranes based on azobenzene and spirobenzopyran derivs, 4039

Mercury and compds
mercuration of anils of benzoylferrocene, 10467
mercuric oxide - iodine oxidation of unsaturated steroid compds, 1833
mercury(II)chloride, nitrate or triflate, use in aromatic iodination of aromatic compds with iodine and mercury(II) salt, 5139
oxidative decarboxylation of acetyloleanolic, acetylursolic and dehydroabietic acids by hydrogen peroxide and a mercury(II) salt, synth of *nor*-derivs, 2591

Metabolites
cheimonophyllon A-E and cheimonophyllal, bisabolane sesquiterpenes from the Basidiomycete *Cheimonophyllum candidissium*, structures, 12649
compactin fungal metabolite from *Penicillum brevicompactum*, synth of hexahydronaphthalene nucleus from ethyl-(1*R*,2*S*)-2-methyl-4-oxocyclohexanecarboxylate and 2-(3-nitropropyl)-1,3-dioxolane, 11743
cyathiformines A-C, fungal metabolites derived from chorismic acid, synth, 2715
19,20-epoxycytochalasin Q and deacetyl analogue, cytotoxic cytochalasins from the fungus *Xylaria obovata*, structures, 5615
(±)-hirsutene, tricyclic terpenoid metabolite of the Basidiomycete *Coriolus consors*, synth by a catalytic allylpalladium-alkyne cyclisation/carbonylation cascade, 415
major human metabolites of docetaxel, partial synth, 10289
morellin, synth of 5,5-dimethyl-7-methoxy-4-oxatricyclo[4.3.1.$0^{3,7}$]decan-2-one, the heterocyclic ring system of morellin, 2599

Metalation
of alkyl(alkythio)benzenes with butyllithium or with the superbase mixture of butyllithium with potassium t-butoxide, 6037
of allyl sulfides leading to α-thiallyl metallic compds, reaction with electrophiles to give the α-substituted allyl sulfides or the γ-substituted vinyl sulfides, 6029

aromatic - in conversion of benzoic acids into their *ortho*-pyridoyl derivs, 2907
carbomagnesiation of 1-(di-*n*-butylamino)-but-2-yn-4-ol or 2-pentyn-1,5-diol in synth of manoalide sesquiterpene, 8793
directed *ortho* − of tertiary benzamides using lactones as electrophiles, synth of keto alcohols, 4897
and electrophilic substitution of *N*-(2-hydroxymethylphenyl)pyrrole, ring construction of pyrrolobenzoxazepine, 2071
intramolecular carbometalation of organozinc reagents, synth of cyclopentylmethylzinc derivs, 11665
mercuration of anils of benzoylferrocene, 10467
metalation properties of methyl *N*-methyl- and methyl *N*-(2,4,6-trimethyl)phenyl-2-carboximidates of thiophene and furan, 4149
of pyrimidines, mechanism of halogen migration during −, unusual halogen-lithium exchange with LTMP, synth of Leshmaniacides, 10299
reductive - of benzylidenecyclopropane derivs with lithium metal, regioselective carbon-carbon σ-bond scission followed by 1,6-proton shift, 2439

Michael reactions
asymmetric − of α-cyano carboxylates catalysed by a rhodium complex with *trans*-chelating chiral diphosphine RhTRAP, 4439
asymmetric Michael reaction of chiral lithioenamines derived from α-alkyl β-keto esters, 13081
of bicyclic tetronic, tetramic and thiotetronic esters, 8237
inter- and intramolecular - between (L)-menthyl *N*-benzyl-5-amino-2*E*-pentenoate and 1-acetoxy-4-methoxymethyloxy-2-nitrobutane, synth of (-)-meroquinene, 2583
involving titanium enolates and "ate" complexes of *N,N*-disubstituted amides and thioamides, 7193
Michael Initiated Ring Closure reaction (MIRC), asymmetric induction in, 5591
Michael-Michael-aldol reaction of simply substituted ketones with methyl methacrylate, synth of cyclohexane derivs, 9061
tandem Michael-S_N2 reaction for the construction of the 3-azabicyclo[3.1.0]-hexane ring system, 9943

Migration
halogen migration during metalation of pyrimidines, unusual halogen-lithium exchange with LTMP, synth of Leshmaniacides, 10299

Mitsunobu reaction
effect of *para*-substituent on − of *p*-oxygenated benzylic alcohols, synthetic routes to flavan-3-ols, 5469
Mitsunobu azide modification, mechanism and the effect of additives on the rate of hydroxyl group activation, 9671
in the morphine series; synth of dihydroisocodeines, dihydroisomorphines and their 14β-hydroxy analogues, 9757
in synth of polyamine analogues, synth of (*R,R*),(*S,S*) and meso-isomers of a tetraamine and conversion to a fluorinated polyamine analogue, 5579

Models
cyclic enediyne model compd of dynemicin A, an antitumour antibiotic with a 10-membered cyclic enediyne moiety, 1449
molecular dynamics study to probe the basis for the binding specificity of calicheamicin γ1, 1379
molecular mechanics model of the transition state for the addition of allyl and crotyl boronates to aldehydes, 8815
NADH model in the pyrrolo[2,3-*b*]pyridine series for reduction of *N*-acylenamines, 13135
porphyrin building blocks for modular construction of bioorganic model systems, synth by reaction of the appropriate aldehyde with pyrrole, 8941

Molecular modelling/mechanics
ammonia-induced cyclocondensations of vinamidiniums, synth of diarylpyridines and arylpyrimidines, 8127
computer-assisted design of chiral boron enolates; role of ate complexes in determining aldol stereoselectivity, 1227
conformation of bilirubin analogues with *N,N*-methylene bridges, 9919
conformational analysis of the carbohydrate portion of T and T_N haptens, 77
conformational analysis and synth of

bridged anabasine, 5,8,9,10,11,11a-hexahydro-6*H*-pyrido[2,1-*f*][1,6]naphthyridine, 9909
conformational change promoted by 3'-ethylphosphate at the branch-point of a tetrameric lariat-RNA, self cleavage reaction model, 8711
conformational comparison of cyclo-[(*S*)-His-(*S*)-Leu] and cyclo-[(*S*)-His-(*S*)-Phe] as catalysts for asymmetric addition of cyanohydrins to aldehydes, 7933
conformational studies of *cis* and *trans* deoxy-schizandrins formed by the non phenolic oxidative coupling of diarylbutanes using ruthenium(IV) dioxide dihydrate, 1153
conformational studies and stereochemical assignments of the lactarane sesquiterpenes furoscrobiculin D and blennin D, 1211
conformational study of β-galactopyranosyl-(1-3) and (1-4)-xylopyranosides by NMR, molecular mechanics, molecular dynamics and semiempirical calculations, 6417
crystal density modelling of $C_{24}H_{28}$ cage-functionalised alkenes, 1687
design and synth of cyclam tetrahydroxamate (CYTROX) and cyclam tetraacetonylacetone (CYTAC) actinide specific chelators, 2657
dipole moment determinations and molecular mechanics calculations in conformational analysis of 4-aryl-2,2,6,6-tetramethyl-heptane-3,5-diones, 11213
highly-substituted calix[4]arenes derived from *p*-cyanomethylcalix[4]arene, 4087
MM2 calculations for determining mechanism of the hydrogen peroxide-acetic acid oxidation of ursolic acid and related compds, 11459
MMX calculations for conformational analysis of 2,3-disubstituted 1,4-dithianes, 10107
molecular mechanics model of the transition state for the addition of allyl and crotyl boronates to aldehydes, 8815
structure of ardisicrenosides E and F, triterpenoid pentasaccharides from roots of *Ardisia crenata*, 11853
studies of OH-depleted calix[4]arenes; influence of OH groups on the relative stability of calix[4]arene conformers, 13377
study of folded vitamin D conformation in solution by synth of 11-fluoro-1α-hydroxyvitamin D_3 by fluorination of the corresponding 11-hydroxy derivs using FAR and DAST, 7049
supramolecular host systems; structural and conformational study of the 1,3,5,7-tetraoxadecalin core system, 9691, 9707
supramolecular host systems; 1,3,5,7-tetraoxadecalin, 1,2-dimethoxyethane and the *Gauche effect* reappraised; theory *versus* experiment, 9707
tetracyclic ketone core of phorbol tumour promoter, synth by condensation of an optically pure carenyl anion with 2-chlorocyclohexanone, 4071
see also Theoretical calculations

Molecular recognition
BINAP-Ru(II) complexes in hydrogenation; organometallic ways for multiplication of chirality, a summary of the work of R. Noyori, 4259
by cage-type cyclophanes having a helically twisted and cylindrical internal cavity, 13601
see also Receptors

Molybdenum and compds
anionic peroxomolybdenum complexes for oxidations of alcohols, 5119
oxodiperoxomolybdenum complex and dimethyldioxirane for oxidation of 3-phenyl-2-methylbenzofuran epoxide, generation of 1,2-dioxetane decomposition products, 8393

Naphthalenes
4-amino-1,2-naphthoquinones, photoaddition reaction with alkenes, synth of 1*H*-benz[*g*]indole-4,5-diones, 8293
2-amino-1,4-naphthoquinone, reaction with β-dielectrophiles, synth of 2- and 4-oxo-1*H*-1-azaanthracene-9,10-diones, 12941
9,10-anthracenedicarbonitrile and 1,4-naphthalenedicarbonitrile, photochemical reactions in acetonitrile in the presence of bases, reactions *via* radical cations, 2115
1,1'-binaphthalene-2,2'-dithiol by poly-

morphism and thermorearrangement of 2,2'-bis-*O*-(*N*,*N*-dimethylthiocarbamato)-1,1'-binaphthalene, 3463
(1,1'-binaphthalene)-2,2'-dithiol, resolution by enzyme catalysed hydrolysis of the corresponding *S*,*S*'-dipentanoate, 7109
1-bromo-3,4-dihydronaphthalene, synth from the corresponding ketones, 2507
2,3-dimethylene-1,4-methano-1,2,3,4-tetrahydronaphthalene, synth and reaction with singlet oxygen to yield epoxy-endoperoxide, 5753
2(*S*)-[1,1-dimethylethylsulfonylmethyl)-3-(1-naphthyl)-propionic acid, synth from 3-bromo-pyruvic acid, building block for protease inhibitors, 4691
dinaphth[2,1-c:1',2'-*e*]oxepin-3-(5*H*)-one, seven-membered lactone-bridged chiral binaphthalene, synth, enantiomer analysis and configurational assignment, 2831
hexahydronaphthalene nucleus of (−)-compactin from ethyl(1*R*,2*S*)-2-methyl-4-oxocyclohexanecarboxylate and 2-(3-nitropropyl)-1,3-dioxolane, 11743
hydronaphthalene compds with a maaliane skeleton by rearrangement of aromadendrane derivs, 4733
manganese(III) and cerium(IV) oxidations of substituted naphthalenes, rearrangements in - and the NIH shift mechanism, 3575
methoxy-substituted *trans*-1-phenylpropenes and 7-methoxy-1,2-dihydronaphthalenes, photoinduced nucleophilic addition of ammonia and alkylamines to −, 9275
nitro- and polynitro- 2-(2,4,6-trinitrophenyl)naphthalenes, synth, 11527
optically active 2'-diphenylphosphino-1,1'-binaphthyls (MOP's) having various functional groups, synth and use in asymmetric synthesis, 4293
sodium naphthalenide, single-electron transfer (SET) reagent, reaction with quinoline, 4-quinazolinone–isoquinoline and *N*-methyloxindole, synth of dimeric and trimeric products, 9079
1,2,8,9-tetrahydrocyclohepta[1,2,3-*fg*:4,5,6-*f'g'*]diacenaphthylene-5-one by reaction of 5,6-dithioacenaphthene with $[Rh(CO_2Cl]_2$, 2361
tetrahydronaphthalenes, synth utilising the cyclodehydration method, 3297
p-tolylsulfenyl, *p*-tolylsulfinyl and *p*-tolylsulfonyl naphthazarins (5,8-dihydroxy-1,4-naphthoquinone), synth, 5013

Natural products

(+)-aromadendrene, constituent of oil of *Eucalyptus globulus*, rearrangement reactions of aromadendrane derivs to sesquiterpenes, 4733, 4745
assignment of carbon-13 chemical shifts of some hopane and migrated hopane derivs by 2D NMR, 2865
E-basidalin, total synth by a route involving the thermal rearrangement of 4-acylmethyl-2-chloro-4-hydroxy-2-cyclobutenone, 7783
2-carboxymethyl-2-hydroxy-tetrahydropyrans, structural unit found in natural products, synth from diketene and aldehyde, 2047
chromomoric acid C-I and C-II methyl esters from *Chromolaena morrii* and *Chromolaena chasleae*, total synth and structural revision, 12337
ciguatera and its off-shoots; research into molecular structure, 3
dehydrobufotenine, toad poison, synth of 8-methoxy-1,3,4,5-tetrahydropyrrolo[4,3,2-*de*]quinoline component, 7879
2,5-disubstituted pyrrolidines from (2*R*)- or (2*S*)-2-t-butoxycarbonylamino-3-phenylsulfonyl-1-(2-tetrahydropyranyloxy) propane and homochiral glycidyl triflate, 7093
γ-hydroxy sulfones of polypropionate structure from homologation of enantiomerically pure γ-hydroxy vinyl sulfone, 7557
(22*R*,23*R*,24*S*)-3β-hydroxy-5-ene-22,23-dihydroxy-24-methyl-cholestane, a brassinolide intermediate from 16-dehydropregnenolone acetate, 2523
(−)-kjellmanianone cyclopentenoid from (+)-tricyclo[5.2.1.$0^{2,6}$]decadienone 2-carboxylic ester, 10597
metasequirin B, a norcycloneolignan, synth of furano bisbenzocycloheptene, a 5,8-bis-epimer of the tetra-*O*-methyl deriv of-, 3363
mevinic acids, synth of conformationally restricted relatives of, 5147
Z,*Z*-2-octadec-9,12-dienoyl-4-hydroxycyclo

hexane-1,3-dione, kairomone and defensive compds of some insects, synth, 6377
pipercide and piperolein A, insecticidal unsaturated amides from black pepper *Piper nigrum*, synth, 11113
pramanicin, antimicrobial agent from a fungal fermentation derived in grass, structure, 1675
α-santalene and α-santalol, prep of 4'-thia analogues by using allyl type organometallic intermediates, 6029
sphingosines, synth of 1,2,3-trihydroxy-4*E*-octadecene as key intermediates for the synth of sphingosines, 10727
see also Alkaloids, Antibiotics, Marine metabolites, Steroids and sterols, Terpenes and terpenoids, and other classes

Nicholas reaction
for ring opening of alkynyl sugars; application to enantioselective synth of oxepane subunits of marine trans-fused polyether toxins, 12883

Nickel and compds
chiral Ni(II) aminoalcohol complexes as catalysts in enantioselective conjugate addition of diethylzinc to chalcones, 4479
liganded nickel complex reducing agents for synth of nitrogen, sulfur and oxygen containing bis-heteroaromatic or bis-heterocyclic derivs by coupling of corresponding halogenated compds, 11893

Nitration
selective nitration *versus* oxidative dealkylation of hydroquinone ethers with nitrogen dioxide, 6727

Nitrenes
from α-elimination reactions of ethyl *N*-[(4-nitrophenyl)sulfonyl]oxycarbamate, 3829

Nitrile oxides
p-chlorobenzonitrile oxides, reaction with phenyl *C*-aminophosphaalkenes, synth of 1,2,4-oxazaphospholines, 12625
cycloaddition to β-substituted-αβ-unsaturated aldehyde equivalents, reversing the regiochemical course, 7969
nitrile oxide-BF_3 complex as electrophilic moiety towards aromatic systems, synth of oximes, 7589
and nitrilimines, reactions with 2-ethoxypyrrolin-5-one, 2-ethoxyisoindol-3-one and 2-ethoxy-1*H*-indol-3-one, 5159

Nitriles
ω-aminonitriles and aminoazoles, reaction with 5-chloro-1,2,4-thiadiazol-3(2*H*)-ones, synth of fused 1,2,4-thiadiazoles, 7019
9,10-anthracenedicarbonitrile and 1,4-naphthalenedicarbonitrile, photochemical reactions in acetonitrile in the presence of bases, reactions *via* radical cations, 2115
aromatic nitrile, electron-transfer photoinduced alkylation of 1,2,4,5-tetracyanobenzene in the presence of tetraalkylsilane or –stannane, scope and mechanism, 6401
o-azidobenzonitriles, photo-induced ring expansions to 3-cyano- and 7-cyano-3*H*-azepin-2-(1*H*)-ones, 5515
(*R*)-γ-chloro-β-hydroxybutyronitrile from epichlorohydrin or 1,3-dichloro-2-propanol using halohydrin hydrogen-halide-lyase (H-lyase), 11821
β-enaminonitriles, synth from reaction of β-enaminonitriles with paraformaldehyde and dimethylamine, reactivity of, 1877
ethoxycarbonyl-nitrile benzylimine $EtOOCC{\equiv}N^{+}\text{-}N^{-}CH_2C_6H_5$, cycloadditions of – and synth of β-amino acids; reactions of ethyl 2-chloro-2-ethoxyacetate and 2-chloro-2-ethoxyacetyl chloride, 7543
introduction into heterocycles and conversion of carboxylic groups into their corresponding nitriles with chlorosulfonylisocyanate and triethylamine, 6549
oxazole-4-nitriles, -phosphonates and -sulfones by rhodium(II) catalysed addition of nitriles to the corresponding diazo compd, effect of ligand on rhodium, 3761
reductive decyanation of – with lithium and 4,4'-di-t-butyl-biphenyl, synth of organolithium reagents, 3447
α-trialkylsiloxy nitriles, reduction with diisobutylaluminium hydride (DIBAH), synth of α-trialkylsiloxy aldehydes and their derivs, 2821
see also Cyano compds, Cyanohydrins

Nitrilimines
and nitrile oxides, reactions with 2-ethoxypyrrolin-5-one, 2-ethoxyisoindol-3-one

and 2-ethoxy-1*H*-indol-3-one, 5159
Nitro compds
1-arenesulfonyl-4-nitroimidazoles, reactions with aniline in aqueous methanol solution, 5741
from primary amines by oxygen transfer using the oxaziridinium salt derived from dihydroisoquinoline as the transfer reagent, 12185
p-halonitrobenzenes, reaction with sodium benzene sulfinate, electrochemical investigation, 7889
3-nitro-2-phenyl-2*H*-1-benzopyrans, 1,3-dipolar cycloadditions to diazoalkanes, synth of benzopyranopyrazole derivs, 4623
nitro- and polynitro- 2-(2,4,6-trinitrophenyl)naphthalenes, synth, 11527
nitro-alkene, Michael addition of heterocyclic amines to a – and subsequent reduction/cyclisation of the nitro group, synth of bicyclic pyrazinones, 4887
γ'- and ε-nitro-β-enaminoketones by reaction of dianions of acyclic β-(monoalkylamino)-αβ-unsaturated ketones with nitroalkenes, subsequent conversion to dihydropyrroles, 9831
nitroalkanes from hydrocarbons by utilization of the $GoAgg^{IV}$ system in the presence of sodium nitrite, 47
nitroarenes, reaction with dithiane derivs, oxidative versus vicarious nucleophilic substitution of hydrogen, 4913
nitroaryl ethers, nucleophilic aromatic substitution reactions of, kinetic studies of the quenching of - by bromide ions in cationic micellar solution, 3071
4'-nitrobenzenesulfenanilide, reaction with Lewis acids and application to sulfenocyclisation of alkenes and alkynes, 12395
2-(4-nitrophenoxy)quinoxaline, synth and reactions with hydroxide ion in micellar systems, 1927
polyhalogenonitrobenzenes, mechanistic studies on the electrochemical reductive coupling of–, example of radical anion dimerisation, 6913
Nitrogen heterocycles
bicyclic tetramic esters, Michael and substitution reactions of, 8237
by reactions of 3-substituted-5*H*-1,2,4-triazino[5,6-*b*]indoles with π-acceptors, 9997
derived from β-enaminonitriles, 1877
2,5-*trans*-2',5'-*trans*-5,5'-dimethylperhydro-2,2'-bipyrimidine and heterocycles derived from its condensation with formaldehyde, synth and stereochemical assignment, 2497
medium-ring nitrogen-containing alcohols and related compds, synth and stereochemistry, 13199
(–)-meroquinene, enantioselective synth based on inter- and intramolecular Michael reaction between (L)-menthyl *N*-benzyl-5-amino-2*E*-pentenoate and 1-acetoxy-4-methoxymethyloxy-2-nitrobutane, 2583
nitrogen containing bis-heteroaromatic or bis-heterocyclic derivs by coupling of corresponding halogenated compds in the presence of liganded nickel complex reducing agents, 11893
pyrrolizidines from cyclisations of aminyl radicals, 1295
see also Lactams, and the individual ring systems
Nitrones
chiral thiaalkenyl nitrones, intramolecular cycloaddition of, synth of bicyclic compds, 3929, 3943
cyclic and acyclic –, 1,3-dipolar cycloaddition with dimethyl maleate, formation of cycloadducts with *trans*-configurated ester groups, 7417
from secondary amines and imines by oxygen transfer using the oxaziridinium salt derived from dihydroisoquinoline as the transfer reagent, 12185
intramolecular – cycloaddition for stereoselective synth of fused γ-lactams, 5503
C-methyl-*N*-phenylnitrone, stereochemistry of 1,3-cycloadditions to substituted styrenes, 6671
nitrone intermediates in synth of homochiral cycloadducts derived from sugar aldoximes, 5495
Nitroso compds
nitroso derivs from primary amines by oxygen transfer using the oxaziridinium salt derived from dihydroisoquinoline as the transfer reagent, 12185

Nitroxides
α-(hydroxymethyl)oxazolidin-3-oxyls, synth and paramagnetic properties, 12923
NMR
2D, biotransformation of shikonin by human intestinal bacteria, 3081
boron, alkylbis(2,6-dimethyl-4-methoxyphenyl)boranes, 13775, 13801
carbon, 2D, nOe, proton, andersobine, diterpenoid alkaloid from *Delphinium andersonii*, 12283
carbon, 2D, proton, cheimonophyllon A-E and cheimonophyllal, bisabolane sesquiterpenes from the Basidiomycete *Cheimonophyllum candidissium*, 12649
carbon, 2D, proton, hapaioside, 4-hydroxy-6-oxopregnane-3-glycoside from Pohnpei sponge *Cribrochalina olemda*, 12599
carbon, 2D, proton, pseudostellarin A, 12599
carbon, assignment of chemical shifts of some hopane and migrated hopane derivs by 2D NMR, 2865
carbon, COLOC, COSY, HETCOR, NOESY, proton, lignan and chalcone glucosides from the roots of *Pyracantha coccinea*, 5181
carbon, COLOC, HMBC, proton, 12-hydroxyambliofuran, 12-acetoxyambliofuran, five tetracyclic furanoditerpenes and a furanosesterterpene from Western Australian sponge *Spongia* sp., 9893
carbon, COSY, HMBC, nOe, proton, chilocorine, heptacyclic alkaloid from a coccinellid beetle, 2365
carbon, COSY, HMBC, proton, peyssonol A and B and hyatellaquinone, sesquiterpene hydroquinones from the alga *Peyssonnelia* sp. and *Hyatella intestinalis* sp., 4179
carbon, COSY, NOESY, proton, neocarzinostatin (NCS), apoprotein-assisted cyclisation of, 1311
carbon, COSY, proton, briarane and asbestinane diterpenes from corals of *Briareum asbestinum*, structures, 1983
carbon, COSY, proton, reidispongiolide A and B, potent cytotoxic macrolides from New Caledonian sponge *Reidispongia coerulea*, 4829
carbon, 2D, nOe, proton, astin B, from *Aster tataricus*, 11613
carbon, 2D, nOe, proton, study of Ferrier reaction by using (*E*)-selectively deuterated methyl[6-^{2}H]-2,3,4-tri-*O*-benzyl-α-D-*xylo*-hex-5-enopyranoside, 4125
carbon, 2D, proton, dolabellanes, diterpenes from brown alga *Dictyota pardalis* f. *pseudohamata*, 8011
carbon, 2D, proton, new triterpenoid saponin from Chinese *Nothopanax davidii* Harms (*Araliaceae*), 11601
carbon, 2D, proton, *syn*-β-hydroxycyanohydrins and *anti* 2,4-dihydroxy-amides, 8169
carbon, detection of radical intermediates in the reactions of aryllithium compds with carbon monoxide, 4651
carbon, (+)-1,2-dihydrotubipofuran, furanosesquiterpenoid, 5527
carbon, fluorine, trifluoromethylalkenylketones, 11023
carbon, HMBC, HETCOR, proton, salicifoline, isosalicifoline and (−)-epinortrachelogenin, benzylidene-benzyl-γ-butyrolactone-type lignans from leaves of *Bupleurum salicifolium*, 5203
carbon, HMBC, nOe, agelasphins, cerebrosides from the marine sponge *Agelas mauritianus*, 2771
carbon, HMBC, nOe, proton, pseudostellarins A-C, cyclic peptides from roots of *Pseudostellaria heterophylla*, 6797
carbon, HMBC, NOESY, taxuspines A-C, taxoids from Japanese yew *Taxus cuspidata*, 7401
carbon, HMBC, proton, diacetyl lissoclinotoxin, antibiotic polysulfur deriv from the tunicate *Lissoclinum perforatum*, 5323
carbon, HMBC, proton, 3,4-dihydroxystyrene dimers from marine sponge *Jaspis* sp., 13583
carbon, HMBC, proton, 19,20-epoxycytochalasin Q and deacetyl analogue, cytotoxic cytochalasins from *Xylaria obovata*, 5615
carbon, HMBC, proton, ROESY, 5-hydroxytiagabine, 8699
carbon, HMBC, proton, ROESY, pramanicin, antimicrobial agent from a fungal fermentation derived in grass, 1675
carbon, HMBC, proton, ROESY, withajardins A, B, C and D from leaves of

Deprea orinocensis, 1217
carbon, HMBC, proton, variolin A and B and *N*(3')-methyl tetrahydrovariolin B from Antarctic sponge *Kirkpatrickia varialosa*, 3987, 3993
carbon, HNBC, proton, phloeodictines A1-7 and C1-2, antibiotic and cytotoxic guanidine alkaloids from the New Caledonian sponge *Phloeodictyon* sp., 3415, 3415
carbon, lithium, aggregation behaviour of butyllithium, phenyllithium and lithium diisopropylamide in dimethoxy- and diethoxymethane, 5861
carbon, lithium, proton, study of 2-lithio-1,3-dithiane and 2-triorganosilyl-, 2-t-butyl- and 2-phenyl-2-lithiodithianes, solution ion pair structure, 5869
carbon, NMR studies of dianions of unsaturated carboxylic acids, 5109
carbon, nOe, NOESY, proton, conformational analysis of dirithromycin and epi-dirithromycin, 3857
carbon, nOe, proton, hosenkosides A-E, baccharane glycosides from the seeds of *Impatiens balsamina*, 4973
carbon, nOe, proton, *neo*-clerodane derivs from eriocephalin, 13553
carbon, nOe, pseudostellarins D-F, tyrosinase inhibitory peptides from the roots of *Pseudostellaria heterophylla*, 9975
carbon, NOESY, proton, discodermins F-H, cytotoxic and antimicrobial tetradecapeptides from the marine sponge *Discodermia kiiensis*, structure revision of discodermins A-D, 13409
carbon, NOESY, proton, indole derivs from the fruit bodies of *Tricholoma sciodes* and *T.virgatum*, 3571, 3571
carbon, NOESY, proton, nakijiquinones A and B, antifungal sesquiterpenoid quinones with an amino acid residue, isolation from Okinawan sponge *Spongiidae*, 8347
carbon, NOESY, proton, topsentiasterol sulfates A-E, antimicrobial sterol sulfates from marine sponge *Topsentia* sp., 7765
carbon, origin of transannular interactions in diketones and methylene-ketones as detected by ^{13}C NMR spectroscopy, *ab initio* MO study, 10813
carbon, oxygen, isomeric allyl and (*Z*)-propenyl ethers, relationship with their relative thermodynamic stabilities, 7293
carbon, oxygen, proton, 4- to 9-membered 1-methoxycycloalkenes, 5795
carbon, phosphorus, proton, nucleoside methylphosphonate, new proline derived chiral building blocks for synth, 5719
carbon, phosphorus, proton, TOCSY, conformational change promoted by 3'-ethylphosphate at the branch-point of a tetrameric lariat-RNA, self cleavage reaction model, 8711
carbon, [3'-^{13}C]-(*R*)-(−)-pindolol, effective β-blocker, synth utilising a lanthanum-lithium-(*R*)-BINOL catalysed nitroaldol reaction, 12313
carbon, pregnane glycosides from *Leptadenia reticula* Wight and Arn, 789
carbon, proton, 3-arylisoquinolium salts from Bischler-Napieralski reaction of 1,2-diarylethylenenamides, 2207
carbon, proton, 1-alkoxycarbonylalkylidenetriphenylarsoranes, 13765
carbon, proton, *nor*-ambreinolide, 6653
carbon, proton, assisted by the Lsd program for structure determination of azadirachtin, limonoid antifeedant from *Azadirachta indica*, 12267
carbon, proton, β-cyclodextrin chalcone complexes, 7903
carbon, proton, benzotriazolyl substituted vinyl ethers, 6005
carbon, proton, carapolides C-I and evodoulone from extracts of seeds of *Carapa grandiflora* (Meliaceae), 9343
carbon, proton, conformational analysis of 2,3-disubstituted 1,4-dithianes, 10107
carbon, proton, conformational analysis of 2-halotetrahydrothiopyran *S*-oxides, diminution of the anomeric effect in S(O)-C-X compared to S-C-X segments, 4937
carbon, proton, conformational analysis of the carbohydrate portion of T and T_N haptens, 77
carbon, proton, convolutamides A-F, γ-lactam alkaloids from the marine bryozoan *Amathia convoluta*, 10201
carbon, proton, degree of intracluster etheration and reactivity of *sec*-butyllithium towards ethylene, 5933
carbon, proton, 1,2-diarylethylamines and

ethylenenamides, 2207
carbon, proton, diarylpyridines and arylpyrimidines from vinamidiniums, 8127
carbon, proton, didemnilactones A and B and neodidemnilactone, fatty acid metabolites from tunicate *Didemnum moseleyi* (Herdman), 7385
carbon, proton, bis(3,5-diketo-1*H*-pyrazole)-[26]crown-12, 4765
carbon, proton, erylusamines A-E from marine sponge *Erylus placenta*, 1105
carbon, proton, ester derivs of okadaic acid from *Prorocentrum lima*, 9175
carbon, proton, euryspongiols, ten new hydroxylated 9,11-secosteroids with antihistaminic activity from the sponge *Euryspongia* sp., 3813
carbon, proton, favelol, isofavelol and favelone, benzocycloheptenone derivs from the bark of *Cnidoscolus phyllacanthus*, 5659
carbon, proton, 3-functionalised 5-chloro-6-methyl-2*H*-1,4-oxazin-2-ones and pyridines from cycloaddition-elimination reactions with substituted acetylenic compds, 5211
carbon, proton, furanosesquiterpenes from *Dysidea herbacea*, configurational analysis , absolute stereochemistry, 3879
carbon, proton, helioxenicins A-C, diterpenes from blue coral *Heliopora coerulea*, 9989
carbon, proton, 20-hydroxyecdysone glycosides, 9679
carbon, proton, hymenamides G-K, cyclic octapeptides from Okinawan marine sponge *Hymeniacidon* sp., 4667
carbon, proton, interconversion between 3,4-dihydro-4-formyl-2-hydroxy-2*H*-benzo pyran and 2,3,3a,8a-tetrahydro-2-hydroxyfuro[2,3-*b*]benzofuran moieties, 7597
carbon, proton, (*E*) and (*Z*)-iodoalkylidene lactones, 2161
carbon, proton, *meso*-substituted dipyrromethanes, 11427
carbon, proton, millecrone A and B, millecrol A and B, four sesquiterpenes from the South African nudibranch *Leminda millecra*, 3065
carbon, proton, β-naltrexol, β-naloxol, β-naltrexamine and related morphine series compds, 9757
carbon, proton, *nor*-derivs of acetyloleanolic, acetylursolic and dehydroabietic acids derived from oxidative decarboxylation by hydrogen peroxide and a mercury(II) salt, 2591
carbon, proton, oxidised derivs of ursolic acid, 11459
carbon, proton, pentapyrrole analogues of bilirubin and biliverdin, 8579
carbon, proton, phytoecdysteroids from *Polypodium vulgare*, 7247
carbon, proton, salvigenane and isosalvipuberulan diterpenoids from aerial parts of *Salvia leucantha*, 11593
carbon, proton, shimofuridins B-G, nucleoside deriv containing an acylfucopyranoside moiety from the Okinawan marine tunicate *Aplidium multiplicatum*, 8651
carbon, proton, spiro anomeric oxathiazole sugar deriv from treatment of 2,3,4,6-tetra-*O*-acetyl-1-*S*-(*Z*)-benzhydroximoyl-1-thio-D-glucopyranose with *N*-bromosuccinimide, 6559
carbon, proton, *cis*- and *trans*-1-(3'-substituted-propyl)benzo[*a*]quinolizidinones and quinolizidines, 4873
carbon, proton, teubrevins A and B, *Neo*-clerodane diterpenoids from *Teucrium brevifolium*, structures, 2289
carbon, proton, 6β,7β,8α, and 6β,7β,8β-trihydroxy labdadienes, 2055
carbon, pyrrolinones from reaction of *N*-substituted enamines with phenylglyoxal or glyoxal, 7849
carbon, theonezolides B and C, macrolides with various functionalities from Okinawan sponge *Theonella* sp., 8355
carbon, *p*-tolylsulfenyl, *p*-tolylsulfinyl and *p*-tolylsulfonyl naphthazarins (5,8-dihydroxy-1,4-naphthoquinone), 5013
COLOC, COSY, HETCORR, nOe, lintenolides, pentacyclic bioactive sesquiterpenes from the Caribbean sponge *Cacospongia* cf. *linteiformis*, 849
COSY, dinucleotides containing a bridged non-chiral internucleotide 5'- or 3'-phosphoramidate linkage, 10225
COSY, NOESY, phosphorus, proton, ROESY, TOCSY, solution conformation of hexameric and heptameric lariat-

RNA's, 1777
COSY, proton, nOe, ROESY, tetra and hepta peptides containing α,β-dehydrophenylalanine residues in alternate positions, 907
COSY, tetracyclic core of phorbol tumour promoter, 4071
2D, ardisicrenosides E and F, triterpenoid pentasaccharides from roots of *Ardisia crenata*, 11853
2D, conformational study of β-galactopyranosyl-(1-3) and (1-4)-xylopyranosides by NMR, molecular mechanics, molecular dynamics and semiempirical calculations, 6417
2D, dimeric and trimeric products from reaction of sodium naphthalenide, single-electron transfer (SET) reagent, with quinoline, 4-quinazolinone–isoquinoline and *N*-methyloxindole, 9079
2D, ingamines A and B, cytotoxic alkaloids from the marine sponge *Xestospongia ingens*, 6137
2D, ircinols A and B, antipodes of manzamine-related alkaloids from Okinawan sponge *Amphimedon* sp., 7957
2D, proton, *seco*-limonoids, potent new cell adhesion inhibitory compds from the root of *Trichilia rubra*, 11369
2D, thiotipin, novel thiopeptide with a *tip* A promoter inducing activity produced by *Streptomyces* sp. DT31, 11659
deuterium, 1,3-dioxolanes from baker's yeast fermentation of D-mannose, D-glucose and D-fructose, 857
fluorine, *S*-(2,2-difluoro-3-oxohexadecyl)-coenzyme A and *S*-(3,3-difluoro-2-oxopentadecyl)-coenzyme A, inhibitors of *N*-myristoyltransferase (NMT), 9847
nOe, 2-acyl-3,4-dihydro-1,4-benzothiazines, 5037
nOe, conformational analysis of a cyclic depsipeptide calcium blocker from *Hapsidospora irregularis*, leualacin, 6537
nOe, conformational analysis and synth of bridged anabasine, 5,8,9,10,11,11a-hexahydro-6*H*-pyrido[2,1-*f*][1,6]naphthyridine, 9909
nOe, derivs of 6,19-oxygenated 4α,18-epoxy-*neo*-clerodanes, 5451
nOe, identification of purine deoxyribonucleoside anomers, 11363
nOe, proton, characterization of calicheamicin γ^1 bound to DNA, 1351
nOe, proton, conformational study of *Z*- and *E*-isositsirikine epimers, determination of their C16 configurations, 9207
nOe, proton, 2'- and 3'-hypermodified tricyclic nucleosides, 4921
nOe, proton, methylthiopropenoic acid and cinnamic acid amides, 6279
nOe, regioassignments of ethyl cyanoimidazolecarboxylates by nOe studies on monocyanoimidazoles, 2641
nOe, two new neolignans from stems and fruits of *Piper wightii*, 2231, corrig. 6721
NOESY, dianchinenosides E-H, triterpenoid saponins from *Dianthus chinensis* L., 12811
phosphorus, absolute configuration of α-hydroxyphosphonates by ^{31}P NMR spectroscopy of corresponding Mosher esters, 10253
phosphorus, design and application of new chiral phosphonates for the enantiomeric excess determination of unprotected amino acids; pH dependency of the diastereomeric shift differences, 11721
phosphorus, proton, 1,3,2-dioxaphospholane-2-sulfide, 6975
proton, AAL-toxins TA_1 and TA_2, host-specific toxins produced by *Alternaria alternata*, 13347
proton, aminoarabinose and aminoaltrose derivs from 1,2-dihydropyridines, 1135
proton, analysis of *R*-(+)- and *S*-(−)-α-methoxy-α-trifluoromethylphenyl acetic acid esters of flavan-3-ols and 4-aryl flavan-3-ols, absolute configuration, 12477
proton, azinium-*N*-(2'-azinyl)aminides, 4995
proton, cage-type cyclophanes having a helically twisted and cylindrical internal cavity, specific molecular recognition by–, 13601
proton, complexation of amino acids by cyclotetrachromotropylene in aqueous solution, importance of CH-π and π-π interactions, 3453, 3453
proton, conformational comparison of cyclo-[(*S*)-His-(*S*)-Leu] and cyclo-[(*S*)-His-(*S*)-Phe] as catalysts for asymmetric addition of cyanohydrins to

aldehydes, 7933
proton, conformational studies and stereochemical assignments of the lactarane sesquiterpenes furoscrobiculin D and blennin D, 1211
proton, di-, tetra- and pentapeptide derivs of 5-fluorouracil, 3747
proton, diastereomeric diethylphosphonopeptide inhibitor of the cyclic AMP-dependent protein kinase catalytic subunit, 1919
proton, Eu(FOD)$_3$ shift experiments to determine position of substituents in sulfur substituted cyclopropanes derived from organothio sulfonyl carbenes, 3721
proton, gear effect in substituted pyridones by dynamic NMR, 2561
proton, highly-substituted calix[4]arenes derived from *p*-cyanomethylcalix[4]arene, 4087
proton, 11α-hydroperoxy diacetyl hederagenin, triterpenoid deriv from *Serjania triquetra* (Sapindaceae), 3869
proton, palladium complexes of 1-(2-diphenylphosphino-1-naphthyl)isoquinoline , 4493
proton, polyoxygenated steroids derived from 7,9(11)-diene steroids, 4835
proton, product from bromination of benzobarrelene, 10555
proton, pyrido[2,3-*d*]pyrimidine derivs with calcium channel antagonist activity, 8085
proton, ring contraction of sulfenamides derived from thiochroman-4-ones, 827
proton, studies on forskolin ring C forming reactions *via* 1,9-dideoxy forskolin, 139, corrig. 4037
proton, studies of OH-depleted calix[4]arenes; influence of OH groups on the relative stability of calix[4]arene conformers, 13377
proton, study of folded vitamin D conformation in solution by synth of 11-fluoro-1α-hydroxyvitamin D$_3$ by fluorination of the corresponding 11-hydroxy derivs using FAR and DAST, 7049
proton, study of intramolecular aggregation of 1,11-dilithio-5,5,7,7-tetramethyl-5,7-dihydrodibenz[c,*e*]oxepin, a conformationally confined analogue of *o,o'*-dilithiobiphenyl, 5881
proton, to study the β-hydroxysulfoximine-catalysed alkyl transfer from diethylzinc to benzaldehyde, 4355
proton, variable temp, [1-[3',5'-bis-*O*-(t-butyldimethylsilyl)-β-D-arabinofuranosyl] cytosine]-2'-spiro-5"-(4"-amino-1",2"-oxathiole-2",2"-dioxide), 11013
proton, variable temp, diester-calix[4]-arenediquinone, complexation studies, 931
proton, variable temp, stereoisomerism in *N*-cyano-*O*-phenylisoureas and related compds, 12211
proton, variable temperature, study of decarboxylative three carbon ring expansion of cyclic secondary α-amino acids *via* azomethine ylid formation, 5067
proton, zinc *meso*-tetraphenylporphyrin as shift reagent for NADH-models, 8227

Nucleic acids
conformational change promoted by 3'-ethylphosphate at the branch-point of a tetrameric lariat-RNA, self cleavage reaction model, 8711
DNA, characterization of calicheamicin γ1^I bound to DNA, 1351
DNA cleavage reagents, 4-amino substituted and 4-unsubstituted 1,10-phenanthroline-3-carboxylic acid derivs as cleaving reagents, 889
DNA, features of DNA recognition for oriented binding and cleavage by calicheamicin, 1361
hexameric and heptameric lariat-RNA's, solution conformation and their self-cleavage reactions, 1777
synth and reactions of a family of DNA-DNA affinity cross-linking agents with DNA, 12065

Nucleosides
acyclovir and its 6-deoxy derivative, synth from 2-amino-6-(4-chlorophenylthio)-9*H*-purine, 9195
2'-*C*-alkynyl-2'-deoxy-1-β-D-arabinofuran-osylpyrimidines *via* radical deoxygenation of t-propargyl alcohols in the sugar moiety, 10397
9-(β-D-apio-D-furanosyl)adenine, *cis* and *trans* dideoxynucleosides of the apiose family, synthetic approaches, 117
boron analogues of nucleosides, chemistry of, 12521

2'- or 3'-*C*-branched nucleosides and 3'-bis-*C*-substituted-3'-deoxy-3'-dehydro-[3.3.0]-α-fused thymidines by intramolecular radical trapping by tethered acetylenes, 5255, 5273
5-bromoethynyl-2'-deoxyuridine, pyrimidine nucleoside, synth from dibromovinyluracil, antiviral activity, 8371
[1-[3',5'-bis-*O*-(t-butyldimethylsilyl)-β-D-arabino- and β-D-ribofuranosyl]cytosine]-2'-spiro-5"-(4"-amino-1",2"-oxathiole-2",2"-dioxide), analogues of anti-HIV-1 agent TSAO-T, synth, 11013
carbocyclic nucleoside analogues, synth of (1*R*, *cis*)-3-aminomethyl-1,2,2-trimethylcyclopentane-methanol from α-camphidone as an intermediate in the synth of-, 2175
carbocyclic nucleosides, synth, 10611
(±)-*cis* and (±)-*trans*- 9-(2-hydroxymethylcyclopropyl)adenine, synth from the corresponding dialkyl 1,2-cyclopropane dicarboxylates, 10431
coformycin, ribonucleoside with use in cancer and viral chemotherapy, total synth of (±)-carbocyclic coformycin, 6695
2',3'-deoxy-2'- or 3'-C_2-branched- or 2',3'-α-fused-isoxazolidine nucleosides, synth directly from seconucleoside, 5279
2'-deoxy-2'-methylidene pyrimidine nucleosides, reactivity of - and synth of 3'-amino-2',3'-dideoxy-2'-methylidene pyrimidine nucleosides *via* rearrangement of allylic selenides, 689
2'-deoxy- and ribo-nucleosides, aminoacylation of − through an enzymatic reaction with oxime aminoacyl esters, 6927
2'-deoxy-pyranosyl nucleosides from glycals through consecutive addition of phenylselenenyl chloride and glycosylation, factors controlling the stereoselectivity, 12219
1-[2',3'-dideoxy-3'-*C*-(hydroxymethyl)-α-D-erythro-pentopyranosyl]-thymine, branched chain hexopyranosyl nucleoside, 1189
enaminonucleosides by reaction of 2',3'-di-*O*-mesyl-*lyxo*-uridine with secondary amines, 13251
[(2'*S*,3*S*')-bis(hydroxymethyl)azetidin-1-yl] pyrimidine nucleosides, synth as antiviral agents, 13335
2'- and 3'-hypermodified tricyclic nucleosides, synth, conformation and their use in synth of 2'- or 3'-isomeric 4(7)-substituted isoxazolidine-nucleosides, 4921
isomeric dideoxynucleosides with *S,S* absolute stereochemistry as potential antiviral agents, synth, 7747
2'-*O*-methyl uridine, synth from 2'-*O*-methyl sugar synthon, 5361, corrig. 7341
nucleoside methylphosphonate, new proline derived chiral building blocks for synth, 5719
3'-*C*-phosphononucleosides in ribo- and 2-deoxyribo- series, synth from *C*-phosphonosugars derived from 2-deoxy-D-ribose and α-D-xylofuranose, 8427
primary hydroxyl of thymine 1-(1-deoxy-β-D-psicofuranosyl)nucleoside, intramolecular hydrogen bonding in−, 6689
purine and pyrimidine analogues of 1,4-anhydro-2-deoxy-D-arabitol and 1,4-anhydro-2-deoxy-3-hydroxymethyl-D-arabitol, ring expanded oxetanocin analogues, synth and biological evaluations, 10167
purine deoxyribonucleoside anomers, identification by two dimensional NOESY NMR, 11363
shimofuridins B-G, nucleoside deriv containing an acylfucopyranoside moiety from the Okinawan marine tunicate *Aplidium multiplicatum*, isolation and structure, 8651
3'-*C*-substituted-3'-nitromethyl-*ribo*-thymidines, synth, 4167
5-*O*-sulfamoyl nucleosides from 5-*O*-sulfamoyl-1,2,3-tri-*O*-acetyl-β-D-ribofuranose using a modification of the Vorbrüggen-Hilbert-Johnson reaction conditions, 6825
thiadiazine diacyclonucleosides, regioselective lipase-mediated acylation-deacylation in, 13865
trihydroxylated carbocyclic nucleosides, synth from *cis*-3,4-bis(benzyloxymethyl)-cyclobut-1-ene, 13145
two *pseudo*-D-arabinofuranosylnucleosides, (+)-cyclaradine and (+)-1-*pseudo*-β-D-arabinofuranosyluracil, synth from D-arabinose, 9961
3'-vinylazido- and 3'-azido-3'-azidomethyl nucleosides from 3'-α-mesyloxy-

nitriles of nucleosides, 7269
Nucleotides
boron analogues of nucleotides, chemistry of, 12521
C8-histamino-r(UpA), self cleavage of – promoted by $ZnCl_2$; mechanistic studies on a designed ribonuclease mimic, 11699
criteria for the economic large scale solid-phase synth of oligonucleotides, 2617
dinucleotides containing a bridged non-chiral internucleotide 5'- or 3'-phosphoramidate linkage, synth, 10225
oligo– containing a *N*-cyanoguanidine linkage, synth, enzymatic stability and physicochemical props of, 7231
oligodeoxyribonucleotides covalently linked to stabilising agents of the coumarin family, synth and complementary complex formation properties, 4009
oligonucleotides bearing a carboxy-, amino-, carboxamido- or mercaptoalkyl spacer arm at the 3'-terminus, synth using non-nucleosidic solid supports, 7203
oligonucleotides *via* phosphoramidite approach utilising 2-diphenylmethylsilylethyl (DPSE) as a phosphorus protecting group, 9255
3'-*C*-phosphonates as nucleotide analogues, synth from *C*-phosphonosugars, 8427

Olefination
olefination, geminal dialkylation and alkylative reduction of aliphatic aldehydes; reaction of *gem*-bistriflates with higher order dialkylcyanocuprates, 13231
Peterson reaction, stereoselectivity in–, synth of BRL 49467, 6643
Olefins
aromatic olefins, reactions induced by aminium salts, protic-acid or radical cation catalysed process, 12685
by addition of lithium metal to cyclic and acyclic alkynes *via* vicinal dilithioalkenes, 8019
cis configured – by desulfurisation of 5,6-dihydro-1,4-dithiins, total synth of (*Z*)-9-tricosene (muscalure), 7265
$CuCl_2$-induced photooxidation of –, chemo- and regioselectivities, 7375
1,1- and 1,2-diarylethylenes, electron transfer photooxygenation of – sensitised by 2,4,6-triphenylpyrylium tetrafluoroborate, involvement of oxirane intermediates, 8773
functionalised monochiral olefins, diastereoselective cyclopropanation of –, synth of 1-amino-2-phenyl(alkyl)cyclopropanecarboxylic acids, 12443
heterogeneous catalytic asymmetric dihydroxylation of –; a new polymeric support and a process improvement, 11321
see also Alkenes, Cycloalkenes (general and specific)
Organoleptics
see Flavours and fragrances, Pheromones
Osmylation
catalytic double - of 1,2-dihydropyridines, synth of aminoarabinose and aminoaltrose derivs, 1135
Oxazines
dihydro-1,3-oxazine intermediates in synth of γ-hydroxy-α-amino acids from (*Z*)-2-phenyl-4-benzylidene-5(4*H*)-oxazolone, 10021
cis-4a,8a-dimethyl[1,4]-oxazino[3,2-*b*][1,4]-oxazine from reaction of 2,3-butanedione with ethanolamine, 9951
3-functionalised 5-chloro-6-methyl-2*H*-1,4-oxazin-2-ones and pyridines from cycloaddition-elimination reactions with substituted acetylenic compds, 5211
oxazinone derivs by intramolecular nucleophilic attack of the hydroxy group in 5-hydroxychromen[3,4-*b*]azepines, 1063
Oxazoles
oxazole-4-sulfones, -phosphonates and -nitriles by rhodium(II) catalysed addition of nitriles to the corresponding diazo compd, effect of ligand on rhodium, 3761
2-phenyl-5-(2-pyridyl)-oxazole by photoinduced ring transformation of pyrido-[1,2-*b*]pyridazinium-4-olate, 4699
4-(4-pyridyl)oxazoles from 4-acylaminomethyl-1-alkylpyridinium salts by heating with acetic anhydride, 10061
1,2-Oxazoles, *see* Isoxazoles

Oxazolidines, oxazolidinones
acyl-1,3-oxazolidin-2-ones, Diels-Alder reactions of – catalysed by lanthanide(III) trifluoromethanesulfonates, 11623
N-acyloxazolidinones, lithium and titanium enolates of –, reaction with benzaldimines, 12755
N,N'-[(4",5"-dimethyl)1",2"-phenyl ene]-2,2'-dimethyl-bisoxazolidine from reaction between 2,3-butanedione and ethanolamine, 9951
α-(hydroxymethyl)oxazolidin-3-oxyls, synth and paramagnetic properties, 12923
1,3-oxazolidines, addition of Grignard reagents to - and chiral imines, synth of (*R*)-2-aryl- and (*R,R*)-2,5-bis(aryl)-pyrrolidines, 1083
(*R*)-2-phenyl-4-methylene-oxazolidin-5-one , diastereoselective Diels-Alder reactions of, 941
4-(2'-pyridyl)-1,3-oxazolidines, synth as precursors for 2-(2'-pyridyl)-2-amino-alcohols, 13493
Rh_2(4*S*-MEOX)$_4$ as catalyst for cyclopropanation of *N*-allylic and *N*-homoallylic diazoacetamides, 4519
αβ-unsaturated *N*-acyloxazolidinone, addition of allylsilanes, 1073
Oxazolines, oxazolinones
2-alkyl-2-oxazoline-4-carboxyamides derived from α-amino-β-hydroxy acids, reaction with aryl- and alkylsulfonyl chlorides, synth of 2-alkyl-2-oxazoline-4-carboxyamido-*N*-sulfonyl derivs, 5083
homochiral bis(oxazolinyl)pyridine type ligands from (*S*)-valine, new ligands for cyclopropanation reaction of olefins, 13725
mercaptoaryl-oxazolines, synth and use as ligands in the enantioselective copper-catalysed 1,4-additions of Grignard reagents to enones, 4467
2-oxazolines, synth and reactivity of, 2297
1,3-oxazolium-5-olates (münchnones), intermolecular 1,3-dipolar cycloadditions with acetylenic dipolarophiles, regioselectivity, 93
sulfur and phosphorus containing oxazolines as ligands for asymmetric catalysis, 799
Oxepanes
dehydrooxepane unit of ciguatoxin by Nicholas reaction of alkynyl sugars, 12883
Oxepines
1,11-dilithio-5,5,7,7-tetramethyl-5,7-dihydrodibenz[*c,e*]oxepin, a conformationally confined analogue of *o,o'*-dilithiobiphenyl, NMR study of intramolecular aggregation, 5881
dinaphth[2,1-*c*:1',2'-*e*]oxepin-3-(5*H*)-one, seven-membered lactone-bridged chiral binaphthalene, synth, enantiomer analysis and configurational assignment, 2831
Oxetanes, oxetanones
bisdioxetane and endoperoxide by photooxygenation of tetramethoxybenzobarrelene, 9009
1,2-dioxetane decomposition products from the oxidation of 3-phenyl-2-methylbenzofuran epoxide by dimethyldioxirane and oxodiperoxomolybdenum complex, 8393
ring opening of oxetanes using the β-silicon effect as a control, 12319
Oxidation
of alcohols by anionic peroxomolybdenum complexes, mechanism, 5119
of amino acids by peroxomonosulfate, substituent effects on mechanism, 9495
anodic – of aryl propargyl and aryl allyl ethers at a platinum electrode, 6387
N- – of aza- and diazaanthraquinones, synth of *N*-oxides of azaanthraquinones, 9505
biomimetic – of the antimelanoma agent 4-*S*-cysteaminylphenol and related catechol thioethers, isolation and reactivity of novel dihydrobenzothiazinequinones, 8757
catalytic asymmetric – of sulfides using (salen)manganese(III) complexes as catalysts, 9609
$CuCl_2$-induced photooxidation of olefins, chemo- and regioselectivities, 7375
of 7,9(11)-diene steroids with ruthenium tetroxide, synth of polyoxygenated steroids, 4835
of 4,6-dimethoxy-2,3-diphenylindole at C-7, 10497
dimethyldioxirane – of 2,3-disubstituted benzofurans, synth of the corresponding benzofuran epoxides, 11441
dimethyldioxirane oxidation of (*Z*)-1-thio-

aurones, (*E*)-3-arylidene-1-thiochroman-4-ones and (*E*)-3-arylidene-1-thioflavan-4-ones, synth of sulfoxides and/or sulfones, 13113
electrochemical – of dihydroindoloquinazoline and dihydroquinazoline derivs, 12773
electron transfer oxidation of enol derivs of 2,3-dihydrobenzopyran-4-ones, 7635
of flavanols by potassium superoxide, synth of acids and aldehydes, mechanism, 9303
functionalization of saturated hydrocarbons, use of t-butyl hydroperoxide as oxidant in Gif-type systems, 19, 31
hydrogen peroxide-acetic acid – of ursolic acid and related compds, 11459
of 1-(3-hydroxyalkyl) and 1-(4-hydroxyalkyl)-1,3-cycloalkadienes, stereocontrolled oxaspirocyclisation and total synth of theaspirone, 559
mercuric oxide/iodine - of unsaturated steroid compds, 1833
of Hantzsch 1,4-dihydropyridines using potassium permanganate, 2479
oxidative cyclisation of homoallyl alcohols under heterogeneous permanganate oxidation conditions, synth of medium-ring keto lactones, 11709
oxidative decarboxylation of acetyloleanolic, acetylursolic and dehydroabietic acids by hydrogen peroxide and a mercury(II) salt, synth of *nor*-derivs, 2591
of 3-phenyl-2-methylbenzofuran epoxide by dimethyldioxirane and oxodiperoxomolybdenum complex, generation of 1,2-dioxetane decomposition products, 8393
of *S*-phenylthioacetic acid by Ce(IV), mechanism and kinetics, 13731
photochemically induced – of aniline by hydroperoxides, an electron paramagnetic resonance study, 9511
Rubottom – of bicyclic silyl enol ethers, synth of bicyclic α-hydroxy ketones, 12903
of some substituted *trans*-cinnamic acids by pyridinium chlorochromate and by chloramine-T, kinetics and mechanism, a non-linear Hammett plot, 10933, 10945
of substituted 2-thiouracils and pyrimidine-2-thione with ozone and 3,3-dimethyl-1,2-dioxirane, 3259
of sulfides by hydrogen peroxide under methyltrioxorhenium(VII) catalysis, 13121
of xanthene, fluorene and diphenylmethane under GoAgg^{IV} and GoAgg^{V} conditions, 1011

N-Oxides
– of azaanthraquinones by *N*-oxidation of heterocyclic quinones, 9505
of ellipticine 5,11-dimethyl-6*H*-pyrido[4,3-*b*]carbazole, synth and selective acetylation of 5,6,11-trimethyl-5*H*-benzo[*b*]carbazole, 4811
from tertiary amines by oxygen transfer using the oxaziridinium salt derived from dihydroisoquinoline as the transfer reagent, 12185
pyrroline *N*-oxide and tetrahydropyridine *N*-oxide, cycloaddition to phenyl vinyl ketone, synth of 5-benzoyl substituted isoxazolidines, 12713
See also Nitrile oxides, Nitrones

S-Oxides
2-halotetrahydrothiopyran *S*-oxides, conformational analysis of-, diminution of the anomeric effect in S(O)-C-X compared to S-C-X segments, 4937

Oximes
aromatic – by action of nitrile oxide-BF_3 complexes on aromatic compds, 7589
cyclopentenylmethyl-, cyclohexenylmethyl- and α-pinenyl cobaloximes, reactions with arenesulfonyl halides, synth of *exo*-methylene cycloalkylsulfones, 1847
oxime aminoacyl esters for enzymatic aminoacylation of 2'-deoxy- and ribonucleosides, 6927
pyrrolizidine oximes 222 and 236, alkaloids of poison-frog *Dendrobates pumilio*, synth and structure, 6129
6-substituted 4,8-diaza-3,3,9,9-tetramethylundeca-2,10-dione dioximes (propylene amine oximes, PnAOs), synth as ligands for ^{99m}Tc complexes used in structure distribution relationship studies, 8617
sugar aldoximes, tandem nitrone generation/cycloaddition reactions with divinyl sulfones, synth of heterocyclic systems *via* nitrone intermediates, 5495

Oxiranes
chloro – from addition reactions of *gem*-

dichloroallyl lithium to benzophenones in the presence of macrocyclic ligands, 8169
trans-3,4,5,6-diepoxycyclohex-1-ene (*anti*-benzene dioxide), reaction with various nucleophiles, 3709
dimethyldioxirane and oxodiperoxomolybdenum complex for oxidation of 3-phenyl-2-methylbenzofuran epoxide, generation of 1,2-dioxetane decomposition products, 8393
2-fluoromethyl-2-hydroxymethyl-, 2-(dimethoxy)methyl-2-fluoromethyl- and 2-carboxy-2-fluoromethyl oxiranes, synth as building blocks for β,γ-dihydroxy-β-fluoromethyl amine and α-hydroxy-α-fluoromethyl-β-amino acid, 13485
furyl-2-oxirane, mechanistic study of uncatalysed alcoholysis of–, 5555
involvement of oxirane intermediates in electron transfer photooxygenation of 1,1- and 1,2-diarylethylenes sensitised by 2,4,6-triphenylpyrylium tetrafluoroborate, 8773
model for glycidic acids opening reaction by ammonia and amines, 9325
ring opening of – by sodium *p*-toluene sulfinate in the presence of polyethylene glycol (PEG) 4000, synth of β-hydroxy sulfone and β-hydroxy sulfide, 10483
see also Epoxides

Oxolanes
3,4-epoxy-2-methyleneoxolanes, [4+2]-cycloadditions with oxadienes, synth of 3,4-epoxy-1,6-dioxaspiro[4,5]dec-7-enes, 8035

Oxygen heterocycles
antifeedants from *Azadirachta indica*; synth of model compds of azadirachtin by oxidative ring contraction reaction, effect of remote substituents, 11553
bicyclic compds by intramolecular cycloaddition of chiral thiaalkenyl nitrones, 3929, 3943
bicyclic tetronic esters, Michael and substitution reactions of, 8237
cryptand[3.3.3]-potassium iodide complex from 1,11-diiodo-3,6,9-trioxaundecane and 1,11-diamino-3,6,9-trioxaundecane, 2721
5,5-dimethyl-7-methoxy-4-oxatricyclo[4.3.1.$0^{3,7}$]decan-2-one, the heterocyclic ring system of morellin, synth, 2599
cis-1,2-fused glycopyrano heterocycles by condensation of 2-amino-2-deoxysugars with isothiocyanates, 3273
5- and 6-membered rings by palladium-catalysed carbonylative cyclisation involving ω-acyl-substituted acyl-palladium, intramolecular trapping with either C- or O-enolates, 425
oxygen containing bis-heteroaromatic or bis-heterocyclic derivs by coupling of corresponding halogenated compds in the presence of liganded nickel complex reducing agents, 11893
pseudomonic acid, antibiotic involving competitive inhibition of isoleucine t-RNA synthetase, modifications at C-12 to C-14, 10739
pyruvate acetals of carbohydrates by coupling of trialkylsilylated diols and pyruvates, 12143
see also Lactones, and the individual ring systems

Oxygen, singlet
oxidation of 3,4-disubstituted furan with singlet oxygen, synth of the 2,3-disubstituted maleic anhydride segment of tautomycin antibiotic, 8969
reaction with 2,3-dimethylene-1,4-methano-1,2,3,4-tetrahydronaphthalene, synth of epoxy-endoperoxide, 5753
reaction with tiglate esters, asymmetric synth of 3-hydroxyperoxy-2-methylidene butenoates, 8929

Oxygenation
electron transfer photo– of 1,1- and 1,2-diarylethylenes sensitised by 2,4,6-triphenylpyrylium tetrafluoroborate, involvement of oxirane intermediates, 8773
photo– of tetramethoxybenzobarrelene, synth and thermal decomposition of bis-dioxetane and endoperoxide, 9009
stereoselective dioxygenation of enoates, 8929

Ozonides
polycyclic – and peroxides derived from hexamethyl (Dewar benzene), structures, 7625

Palladium and compds
dichloro[(*R*)-2,2'-bis(diphenylphosphino)-

1,1'-binaphthyl]palladium(II) as catalyst for asymmetric 1,4-disilylation of αβ-unsaturated ketones, synth of β-hydroxy ketones, 335
palladium complexes of 1-(2-diphenylphosphino-1-naphthyl)isoquinoline as catalysts for the reaction between (*E*)-1,3-diphenyl-2-propenyl acetate and diethyl malonate, 4493
bis(dibenzylideneacetone)palladium(0) and triphenyl phosphine as catalyst for regioselective allylation of fulvenes, 61
intramolecular Heck reactions for prep of steroid and terpene intermediates having *cis* A-B ring fusions, model studies for the total synth of complex cardenolides, 347
palladium(0)-water soluble catalyst from palladium acetate and sulfonated triphenylphosphine as catalyst for allylic substitution with carbon and heteronucleophiles in an aqueous-organic medium, 505
palladium-catalysed arylation of enol ethers with aryl triflates; ligand control of selection for α- or β-arylation of [2-(dimethylamino)ethoxy]ethene, 285
palladium-catalysed carbonylative cyclisation involving ω-acyl-substituted acylpalladium, intramolecular trapping with either C- or O-enolates, 425
palladium-catalysed intermolecular arylation of functionally-substituted cycloalkenes by aryl iodides, 305
palladium-phosphine complexes as catalysts for decarboxylation reactions of allyl β-keto carboxylates, synth of α-fluoroketones, 487
palladium-phosphine complexes for regioselective carbonylation of allylamines, synth of βγ-unsaturated amides, 453
water-soluble sodium triphenylphosphine *m*-sulfonate/$Pd(OAc)_2$ system as catalyst for deprotection of allyloxycarbonyl moiety in aqueous media, 497
zerovalent Pd(Ar-BIAN)(dimethyl fumarate) and divalent $PdCl_2$(Ar-BIAN) complexes containing the rigid bidentate nitrogen ligand bis(arylimino)acenaphthene as catalysts for carbon-carbon bond formation, 323
see also Catalysis, Catalysts

Pauson-Khand reaction
synth of cyclopentenones in – using alkyne dicobalthexacarbonyl complexes, 6955

Peptides and polypeptides
1-aminobenzylphosphonic acids from benzylidenediphenylmethylamines, synth for use as structural units in antithrombotic tripeptides, 5099
anions derived from dipeptides with a glycine at the *C*-terminus, alkylations of, 1975
antitumour cyclic pentapeptide, astin B, from *Aster tataricus*, conformational analysis, 11613
(2*S*)-aziridine-2-carboxylic acid containing peptides, synth, 1717
boron analogues of peptides, chemistry of, 12521
cyclic depsipeptide calcium blocker from *Hapsidospora irregularis*, leualacin, conformational analysis by NMR spectroscopy, 6537
cyclo-[(*S*)-His-(*S*)-Leu] and cyclo-[(*S*)-His-(*S*)-Phe], conformational comparison as catalysts for asymmetric addition of cyanohydrins to aldehydes, 7933
derivs of 4-amino-2-benzazepin-3-one-1-carboxylic acid, conformationally restricted bridged peptide analogues of Phe-Gly, synth by amidoalkylation of Phe-α-methoxyglycine, 10771
di-, tetra- and pentapeptide derivs of 5-fluorouracil, synth by addition of ethyl glyoxylate to *N*-(benzyloxycarbonyl)-amino acid amides, 3747
diastereomeric pair of phosphonopeptide inhibitors of the cyclic AMP-dependent protein kinase catalytic subunit, synth and separation, 1919
dihydroxyethylene dipeptide isostere A-82768, synth *via* an *erythro*-selective addition of a Grignard reagent to a *cis*-α,β-epoxy aldehyde, 6163
dimeric pentapeptide, solution synth by diketopiperazine cyclisation of Glu-Asp dipeptide esters and Asp-racemisation, 2277
dipeptides derived from Boc anthranilic acid and α-amino acid methyl esters, cyclisation of, synth of 1,4-benzodiazepin-2,5-diones, 9051

3,3-diphenyl-2-methylalanine, amino acid for peptides of biological interest, synth, 9837
discodermins F-H, cytotoxic and antimicrobial tetradecapeptides from the marine sponge *Discodermia kiiensis*, structure revision of discodermins A-D, 13409
doliculide, cytotoxic cyclodepsipeptide from the Japanese sea hare *Dolabella auricularia*, total synth, 12853
(2*R*,3*R*)-2,3-epoxysuccinyl-dipeptides, synth by acylation of dipeptides and subsequent attempt at direct conversion to the corresponding epithiosuccinyl deriv, 8381
gel-phase peptide synth on a high-capacity tetraethyleneglycol diacrylate-cross-linked polystyrene support, synth of pardaxin 16-33, 6681
heptapeptides bearing a host and a guest side chain, design and synth, 989
hymenamides G-K, cyclic octapeptides from Okinawan marine sponge *Hymeniacidon* sp., structure and Edman degradation, 4667
introduction of peptidal side-chains corresponding to phenylalanine, tyrosine and tryptophan onto a steroid template, 4225
microginin, angiotensin-converting inhibitory peptide from blue-green alga *Microcystis aeruginosa*, total synth, 11303
peptides containing α-aminoboronic acids for inhibition of thrombin, synth of 1-halo-1-alkyl boronic ester precursors, 3803
phosphono peptides containing a phosphonamidate bond, synth by phosphorylation of amino acid esters with *N*-protected aminoalkylphosphonochloridates, 12743
phosphonomethyl-phenylalanine and phosphotyrosine containing cyclic peptides, synth as inhibitors of protein tyrosine kinase/SH2 interactions, 2691
erythro N-protected α-amino epoxides and peptidyl epoxides, synth from amino acids, 6333
pseudostellarin A, a tyrosinase inhibitory cyclic pentapeptide from *Pseudostellaria heterophylla*, 12599
pseudostellarins A-C, cyclic peptides from roots of *Pseudostellaria heterophylla*, isolation and structure elucidation, 6797
pseudostellarins D-F, tyrosinase inhibitory peptides from the roots of *Pseudostellaria heterophylla*, structures, 9975
somatostatin, tetradecapeptide from ovine hypothalamic extracts, synth of analogues incorporating nucleo amino acids, 7485
3-*O*-stearoyl C_{36}-corynomycolic acid and derived lipopeptides, synth, 6271
tetra and hepta peptides containing α,β-dehydrophenylalanine residues in alternate positions, solution conformation of, 907
tetrapeptide analogues based on 1-aminocyclopropane carboxylic acid for inhibition of carboxypeptidase A, 9729
thiotipin, novel thiopeptide with a *tip* A promoter inducing activity produced by *Streptomyces* sp. DT31, structure and biological activity, 11659
see also Glycopeptides, glycoproteins

Perfumes
see Flavours and fragrances

Peroxides
t-butyl hydroperoxide as oxidant in Gif-type systems, functionalization of saturated hydrocarbons, 19, 31
endoperoxide and bisdioxetane by photooxygenation of tetramethoxybenzobarrelene, 9009
epoxy-endoperoxide from reaction of 2,3-dimethylene-1,4-methano-1,2,3,4-tetrahydronaphthalene with singlet oxygen, 5753
homolytic bond-dissociation in peroxides, peroxyacids, peroxyesters and related radicals, *ab-initio* MO calculations, 4795
polycyclic ozonides and peroxides derived from hexamethyl (Dewar benzene), structures, 7625
tricyclic analogues of artemisinin, synth, conformational analysis and antimalarial activity, 957
β- and γ-unsaturated peroxides derived from pinane, decomposition of – leading to tertiary pinanyl adduct radicals, 9335

Peterson reaction
stereoselectivity in the –, application to synth of BRL 49467, anti-bacterial compds, 6643

Petrochemistry, *see* Geochemistry
Pharmacologically active compds
2-acyl-3,4-dihydro-1,4-benzothiazines, stereoselective synth from 2-benzylidene-4-methyl-3-oxo-2*H*-1,4-benzothiazine, 5037
[1,4'-bipiperidine]-4'-carboxamide, a common pharmacophoric group, synth *via* chloroenamines, 3123
ethyl β-carboline-3-carboxylate (β-CCE) and methyl 4-methyl-β-carboline-3-carboxylate (4-methyl-β-CCM), synth from indole-2-carboxaldehyde, 6299
ketoprufen, 2-(3-benzoylphenyl) propionic acid, non-steroidal anti-inflammatory drug, asymmetric synth by addition of pantolactone to methyl (3-benzoylphenyl) ketene, 6875
tricyclic analogues of artemisinin, synth, conformational analysis and antimalarial activity, 957
see also Chemotherapy, Drugs
Phenols
2-alkynylphenols, cyclisation to methyl benzo[*b*]-furan-3-carboxylates, 11803
2,6-di-t-butyl-4-chlorophenol, reaction with 2,6-dichlorobenzoquinone *N*-chloroimine, *ortho–ortho* 2,4-cyclohexadiene-1-one rearrangement of the reaction product, mechanism, 8809
4-*S*-cysteaminylphenol, antimelanoma agent, and related catechol thioethers, biomimetic oxidation of–, isolation and reactivity of novel dihydrobenzothiazine-quinones, 8757
from reaction between haloaromatics in the presence of Cu-HZSM-5 zeolite, 12913
meta functionalization of-, 1179
metal-template *ortho*-regioslective alkylation of – with 2-, 3- and 4-pyridinealdehydes, synth of 2'-hydroxyphenylpyridinemethanols, 10587
phenyliodoniophenolates from 1,3-dihydroxybenzene derivs, cyclisation and rearrangements of, 11541
rhodium carbenoid mediated O-H insertion reaction with trialkyl 2-diazophosphonoacetates, synth of trialkyl 2-aryloxyphosphonoacetates, 3177
Pheromones
biosynthesis of plant – from marine brown algae phaeophyte *Cutleria multifada*, evidence for a spontaneous [1.7]-hydrogen shift and an 8π*e* electrocyclic ring closure, 10235
erythro-3,7-dimethylpentadecan-2-yl acetate, pheromone of the Scots pine sawfly *Neodiprion sertifer*, synth by ring opening of *trans*-2,3-epoxybutane by higher order cuprate, 5225
grandisol and lineatin, total synth from bicyclo[3.2.0]hept-3-en-6-ones, 3235
(2*R**,5*R**)-2-(1-hydroxy-1-methylethyl)-5-methyltetrahydrofuran (pityol), pheromone of bark beetle *Pteleobius vittatus*, synth by enzyme-triggered opening of an epoxide, 8661
ipsenol, aggregation – of the bark beetle *Ips paraconfusus*, synth from 2-(chloromethyl)-3-tosylpropene, 5829
serricornin, (4*RS*,6*S*,7*S*)-7-hydroxy-4,6-dimethyl-3-nonanone, sex attractant of female cigarette beetle *Lasioderma serricorne*, synth, 2703
sex pheromone of the processionary moth *Thaumetopoea pityocampa*, use of 11-hexadecynoic acid and (*Z,Z*)-11,13-hexadecadienoic acid to investigate the biosynthetic pathway, 9789
(*Z*)-9-tricosene (muscalure), pheromone from the common house fly *Musca domestica* L., synth involving desulfurisation of 5,6-dihydro-1,4-dithiins, 7265
Phosphaalkenes
phenyl *C*-aminophosphaalkenes, reaction with *p*-chlorobenzonitrile oxides, synth of 1,2,4-oxazaphospholines, 12625
phosphatriafulvenes, phosphaalkenes with inverse electron density, reactions with nucleophilic reagents, 759
Phosphetanes
2,4-bis(4-methoxyphenyl)-1,3,2,4-dithiadiphosphetane-2,4-disulfide (Lawesson's reagent), reaction with aromatic dihydroxycompds, synth of 1,3,2-dioxaphospholane-2-sulfide, 6975
Phosphine imines
bis(iminophosphorane), reaction with isocyanate, synth of 1,3,6-benzothiadiazepino[3,2-*a*]benzimidazole derivs and [5+5] rigid bicyclic guanidines, 10029
iminophosphorane mediated imidazole ring formation in synth of aplysinopsin

type alkaloids of marine origin, 2241
iminophosphorane-mediated synth of pyrido[3',2':4,5]thieno[3,2-*d*]pyrimidine derivs with heterocumulenes, 6705
iminophosphoranes, reaction with diaryl ketenes, synth of ketenimines, 5027
Phosphine oxides
β-functionalised phosphine oxides for synth of αβ-unsaturated hydrazones and pyrazole derivs, 12727
phosphocin oxides by oxidative addition reactions of cyclic chlorophosphites and arsenites with diols and 1,2-quinones, 6989
α-phosphoryl sulfoxides, α-chlorination with iodobenzene dichloride and sulfuryl chloride, stereochemistry, 8053
Phosphine ylids, *see* Phosphoranes
Phosphines
BINAP [2,2'-bis(diarylphosphino)-1,1'-binaphthyl]-Ru(II) complexes in hydrogenation; organometallic ways for multiplication of chirality, a summary of the work of R. Noyori, 4259
bisphosphine ligands related to DIOP as chiral modifiers in the Rh(I) catalysed [4+2] cycloisomerisation reaction, electronic and torsional ligand control of absolute stereoselection, 6145
bis(dibenzylideneacetone)palladium(0) and triphenyl phosphine as catalyst for regioselective allylation of fulvenes, 61
dichloro[(*R*)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl]palladium(II) as catalyst for asymmetric 1,4-disilylation of αβ-unsaturated ketones, synth of β-hydroxy ketones, 335
(*S*-1,2-bis(diphenylphosphino)butane-4-ol, acyclic analogue of hydroxy norphos, synth from L-ascorbic acid and catalytic properties, 10419
o-diphenylphosphinophenyl oxazolines, synth as ligands for asymmetric catalysis, 799
DuPHOS-Rh as catalyst for hydrogenation of the double bond of *N*-acylhydrazones, 4399
from cyclisation of dienes and enynes using Ph_2PH, 13533
ligand control of selection for α- or β-arylation of [2-(dimethylamino)ethoxy]ethene, 285
optically active 2'-diphenylphosphino-1,1'-binaphthyls (MOP's) having various functional groups, synth and use in asymmetric synthesis, 4293
optically active expanded chelate phosphines derived from 1,ω-bis(dichlorophosphino)alkanes, synth and use in asymmetric synthesis, 4303
palladium(0)-water soluble catalyst from palladium acetate and sulfonated triphenylphosphine as catalyst for allylic substitution with carbon and heteronucleophiles in an aqueous-organic medium, 505
palladium complexes of 1-(2-diphenylphosphino-1-naphthyl)isoquinoline as catalysts for the reaction between (*E*)-1,3-diphenyl-2-propenyl acetate and diethyl malonate, 4493
palladium-phosphine complexes as catalysts for decarboxylation reactions of allyl β-keto carboxylates, synth of α-fluoroketones, 487
palladium-phosphine complexes for regioselective carbonylation of allylamines, synth of βγ-unsaturated amides, 453
[Rh(chiral diphosphine)]$^+$ type catalysts for the asymmetric catalytic intramolecular hydrosilation and hydroacylation, 4335
rhodium complex with *trans*-chelating chiral diphosphine RhTRAP as catalyst for Michael reaction of α-cyano carboxylates with vinyl ketones or acrolein, 4439
2-substituted 3,4-dimethyl-5-phenyloxazaphospholidine derivs, synth allowing the large scale prep of electronically and sterically differentiated homochiral monophosphine precursors, 6155
triphenylphosphine and tributylphosphine, Mitsunobu esterification reaction with –, mechanism, 9671
water-soluble sodium triphenylphosphine *m*-sulfonate/$Pd(OAc)_2$ system as catalyst for deprotection of allyloxycarbonyl moiety in aqueous media, 497
Phosphinic acids and derivs
phenyl phosphinidene from the decomposition of 1,2,4-oxazaphospholines, 12625
Phospholanes
1,3,2-dioxaphospholane-2-sulfide by reaction of 2,4-bis(4-methoxyphenyl)-1,3,2,4-

dithiadiphosphetane-2,4-disulfide (Lawesson's reagent) with aromatic dihydroxy compds, 6975

Phospholes
anellated heterophospholes, synth and reactivity, 7675

Phospholidines
2-substituted 3,4-dimethyl-5-phenyloxazaphospholidine derivs, synth involving coupling reaction to secure the initial phosphorus-oxygen bond followed by ring closure, 6155

Phospholines
1,2,4-oxazaphospholines by reaction of phenyl *C*-aminophosphaalkenes with *p*-chlorobenzonitrile oxides, 12625

Phosphonamidates
phosphono peptides containing a phosphonamidate bond, synth by phosphorylation of amino acid esters with *N*-protected aminoalkylphosphonochloridates, 12743

Phosphonamidites
P-prolyl-nucleoside-P-methyl-phosphonamidites, synth as chiral building blocks for nucleoside methylphosphonates, 5719

Phosphonic acids and derivs
1-aminobenzylphosphonic acids from benzylidenediphenylmethylamines, synth for use as structural units in antithrombotic tripeptides, 5099
design and application of new chiral phosphonates for the enantiomeric excess determination of unprotected amino acids; pH dependency of the diastereomeric shift differences, 11721
β-functionalised phosphonates for synth of $\alpha\beta$-unsaturated hydrazones and pyrazole derivs, 12727
α-hydroxyphosphonates, absolute configuration by ^{31}P NMR spectroscopy of corresponding Mosher esters, 10253
isolation during synth of 4-bromo- 2*H*-chromenes and 2*H*-thiochromenes from the corresponding ketones and PBr_3, 2507
nucleoside methylphosphonate, new proline derived chiral building blocks for synth, 5719
oxazole-4-phosphonates, -sulfones and -nitriles by rhodium(II) catalysed addition of nitriles to the corresponding diazo compd, effect of ligand on rhodium, 3761
3'-*C*-phosphonates as nucleotide analogues, synth from *C*-phosphonosugars, 8427
phosphonodithioformates, reduction of –, synth of α-phosphonyl thiols and hemidithioacetals, 10277
rhodium carbenoid mediated O-H insertion reaction of phenols with trialkyl 2-diazophosphonoacetates, synth of trialkyl 2-aryloxyphosphonoacetates, 3177

Phosphonium salts
β-functionalised phosphonium salts for synth of $\alpha\beta$-unsaturated hydrazones and pyrazole derivs, 12727
phosphonium ylids obtained by the reaction of 3-phosphorylated 1,4-dichloro-2-aza-1,3-dienes with sodium azide, structure and properties, 1889

Phosphonous acid and derivs
phosphono peptides containing a phosphonamidate bond, synth by phosphorylation of amino acid esters with *N*-protected aminoalkylphosphonochloridates, 12743

Phosphoramidates
dinucleotides containing a bridged nonchiral internucleotide 5'- or 3'-phosphoramidate linkage, synth, 10225

Phosphoramidites
phosphoramidite approach to oligonucleotides utilising 2-diphenylmethylsilylethyl (DPSE) as a phosphorus protecting group, 9255
phosphoramidite and hydrogen phosphonate methods of phosphorylation for synth of phosphodiester of 3β(7β-hydroxycholesterol) and of 5'(3'deoxy,3'azidothymidine), 1173

Phosphoranes
phosphocin oxides by oxidative addition reactions of cyclic chlorophosphites and arsenites with diols and 1,2-quinones, 6989
for Imino-- *see* Phosphine imines

Phosphoric acid and derivs
allylic phosphates, substitution of – with Grignard reagents using a transition metal catalyst, 6017
diesters of 7β-hydroxycholesterol and

carbohydrates, synth by phosphoramidite method, 6569
diethyl isopropyl and isopropenyl phosphate *via* reaction of ketyl radicals of acetone with diethyl phosphoric acid, 1125
diethyl phosphoric acid, reaction with photochemically excited dihydroxy acetone in 1,2-dimethoxy ethane, synth of glycerol-2-diethyl phosphate, 3743
glycerol-2-diethyl phosphate by reaction of photochemically excited dihydroxy acetone in 1,2-dimethoxy ethane with diethyl phosphoric acid, 3743
85% phosphoric acid, reaction with acyclic 1,6-diol, intramolecular 1,6-hydride transfer, 7307
trialkyl phosphates, transformation into organolithium compds by a DTBB-catalysed lithiation, 8551
see also Nucleic acids, Nucleosides

Phosphorous acid and derivs
glycosyl phosphite as a glycosyl donor in the presence of Lewis acid for glycosylation, 6523
phosphite triester approach to the economic large scale solid-phase synth of oligonucleotides, 2617

Phosphorus compds
cyclic chlorophosphites and arsenites, oxidative addition reactions with diols and 1,2-quinones, synth of phosphocin oxides, 6989
phosphodiester of 3β(7β-hydroxycholesterol) and of 5'(3'deoxy,3'azidothymidine), antivirals, synth by phosphorylation, 1173

Phosphorylation
of amino acid esters with *N*-protected aminoalkylphosphonochloridates, synth of phosphono peptides containing a phosphonamidate bond, 12743
phosphoramidite and hydrogen phosphonate methods of - for synth of phosphodiester of 3β(7β-hydroxycholesterol) and of 5'(3'deoxy,3'azido-thymidine), 1173

Photochemistry
of azobenzene and spirobenzopyran, photosensitive artificial membranes based on azobenzene and spirobenzopyran derivs, 4039
$CuCl_2$-induced photooxidation of olefins, chemo- and regioselectivities, 7375
DNA photoinactivating agents, monosulfur and monoselenium analogues of psoralens (derivs of furo[3,2-*g*][1]benzopyran-7-one), 9315
electron transfer photooxygenation of 1,1- and 1,2-diarylethylenes sensitised by 2,4,6-triphenylpyrylium tetrafluoroborate, involvement of oxirane intermediates, 8773
electron-transfer photoinduced alkylation of 1,2,4,5-tetracyanobenzene in the presence of tetraalkylsilane or –stannane, scope and mechanism, 6401
fluorescent quantum yields of methano, ethano and 1,3-propano N_{10},N_{11}-bridged dipyrrinones, 1955
generation of radicals by photo-induced electron transfer and fragmentation of the radical cation, 575
kinetic studies of the nucleophilic quenching of photoexcited nitroaryl ethers (NArE) by bromide ions in cationic micellar solution, 3071
PET, studies on cyclobutyl bond cleavage by adjacent ketyl radical generated under PET conditions, 3835, 3843
photoactivatable (*Z*)-18-[4-[3(trifluoromethyl)diazirinyl]phenyl]-9-octadecenoic acid, synth for protein kinase labelling, 3785
(3+2) photoaddition of 4-amino-1,2-naphthoquinones with alkenes, synth of 1*H*-benz[*g*]indole-4,5-diones, 8293
[2+2] photoaddition of a cyclic enone with silyl enol ether and regioselective β-scission of alkoxy radicals generated from resulting cyclobutanols, total synth of (±)-α-himachalene, 7771
photochemical reactions of 9,10-anthracenedicarbonitrile and 1,4-naphthalenedicarbonitrile in acetonitrile in the presence of bases, 2115
photochemical reactivity of phthalonimide, occurrence of an electrophilic phthalonimidyl radical, 4987
photoinduced nucleophilic addition of ammonia and alkylamines to methoxy-substituted styrene derivs, 9275
photoinduced ring transformations of pyrido[1,2-*b*]pyridazinium-4-olate, 4699
photoisomerisation of (*E*)-iodoalkylidene

lactones, synth of (*Z*)-iodoalkylidene lactones, 2161
photolysis of cyclopentanol hypoiodite in the presence of mercury(II) oxide-iodine, formation of 5-iodopentyl formate, 13101
photooxygenation of tetramethoxybenzobarrelene, synth and thermal decomposition of bisdioxetane and endoperoxide, 9009
photoreactivity of α-tetrasubstituted arylketones, synth of arylenols, 2849
photoredox reactions of polypyridyl chromium(III) complexes with arylthioacetic acids in acetonitrile and aqueous media, 9447
photosensitised [2+2]-cycloaddition reaction of ethylene to 5-alkoxy-2(5*H*)-furanones, mechanism of diastereoselection, 11167
of *N*-phthaloyl derivs of hydroxy substituted amino acids, 701
pyropheophytin-anthraquinone linked molecules, synth as models for the study of photoinduced electron transfer, 4723
pyrylium salt sensitised photochemical deprotections of dithioacetals and ketals, 12821
solid-state − of the mixed crystals between benzoquinones and polymethylbenzenes, 13617
studies on the − of taxol, 8633
of 2-(3,4,5-trimethoxyphenyl)-4-(3,4-methylenedioxyphenyl)-4-oxo-2-butenonitrile (β-cyanochalcone) and its related compds, 9287

Photoelectron spectra, *see* Electronic spectra

Physiologically active compds
(±)-tylophorine, phenanthroindolizidine alkaloid from *Tylophora asthmatica*, synth by intramolecular cycloaddition of an azide with an ω-chloroalkene, 12293

Phytoalexins
4-phenyl-phenalenone-type phytoalexins from rhizomes of *Musa acuminata* infected with the fungus *Fusarium oxysporum*, synth from phenalen-1-one, structure, 10963
withajardins A, B, C and D, withanolides from leaves of *Deprea orinocensis*, structure and absolute configuration, 1217

Phytotoxins
(22*R*,23*R*,24*S*)-3β-hydroxy-5-ene-22,23-dihydroxy-24-methyl-cholestane, a brassinolide intermediate from 16-dehydropregnenolone acetate, 2523

Pictet-Spengler reaction
cyclisation of iminium intermediates derived from reaction between *N*-β-(3-indolyl)ethyl amino acid esters and substituted aromatic aldehydes, synth of tetrahydro-β-carbolines, 11865

Pigments
bilirubin analogues with *N,N*-methylene bridges, synth and properties, 9919
bilirubin, cytotoxic yellow-orange pigment of jaundice with two dipyrrinone chromophores, synth and spectroscopic properties of *N,N*-bridged dipyrrinones, 1955
bilirubin, neurotoxic pigment of jaundice, synth and properties of pentapyrrole analogues of bilirubin and biliverdin, 8579
mesobiliverdin IXα and mesobilirubin IXα bridged between the propionic acid substituents, reactivity of pyrrole pigments, 3967
porphyrins tailored with eight facially-encumbering groups, solid-state light-harvesting complexes, synth from benzyloxybenzaldehydes, 11097
pseudobactin chromophore, siderophore produced by *Pseudomonas fluorescens*, biosynthesis from tyrosine, 9865
shikonin from *Lithospermum erythrorhizon*, naphthoquinone pigment with anti-tumour, antibacterial and anti-inflammatory props, biotransformation by human intestinal bacteria, 3081

Piperazines, *see* Pyrazines

Piperidines
aracemic 2-lithio-*N*-methylpiperidine as configurationally stable α-amino organolithiums, synth, 6077
[1,4'-bipiperidine]-4'-carboxamide, a common pharmacophoric group, synth *via* chloroenamines, 3123
by diastereoselective Diels-Alder reactions of sugar derived azomethines, subsequent reduction to swainsonine-analogue hydroxyindolizidines, 13671
(2*S*,6*R*)-2-cyano-6-oxazolo-piperidine, starting material in stereoselective synth of precoccinelline, ladybug defence

alkaloid, 3123
(−)-desoxoprosopinine and (−)-desoxoprosophylline, piperidine alkaloids, total synth involving intramolecular *N*-alkylation of a D-glucose-derived substrate, 5681
2,5-dimethylpyrrolidines and 2,6-dimethylpiperidines by reductive amination of 2,5-hexanedione and 2,6-heptanedione with hydride reagents, 4709
α,α'-disubstituted piperidines and pyrrolidines, *cis*- and *trans*-configurations by GC-FTIR, application to alkaloids, 11329
isofagomine (3*R*,4*R*,5*R*)-3,4-dihydroxy-5-hydroxymethyl-piperidine, inhibitor of glycosidase, synth from 1,6:2,3-dianhydro-4-*O*-benzyl-β-D-mannopyranose, 13449
(−)-meroquinene, enantioselective synth based on inter- and intramolecular Michael reaction between (L)-menthyl *N*-benzyl-5-amino-2*E*-pentenoate and 1-acetoxy-4-methoxymethyloxy-2-nitrobutane, 2583
1-methyl-2-(4-chlorophenylthiomethyl)-5-(methoxycarbonyl)-piperidine, synth, 10477
oxalopiperidine and oxalopiperidinones, reaction with TMSOTf-TMSCN, synth of thermodynamical products by reversible ring opening, 6287
and pyrrolidines by PET promoted cyclisations of 1-[*N*-alkyl-*N*-(trimethylsilyl)methyl]amines tethered to proximate olefin, mechanistic and synthetic perspectives, 8185
2-substituted piperidines using a camphorimide derived auxiliary for the asymmetric synthesis with *N*-acyliminium ions, 3113

Piperidinones
α-methylene-2-piperidinones and 2-pyrrolidinones by reaction of γ- and β-aminoalkynes with hydrogen and carbon monoxide, 2533
oxalopiperidine and oxalopiperidinones, reaction with TMSOTf-TMSCN, synth of thermodynamical products by reversible ring opening, 6287

Piperidones
piperidone enamines as building blocks for oligoamines, 715, 731

Plants
acetogenins from *Uvaria accuminata* (Annonaceae), structural elucidation by fast atom bombardment mass spectrometry, 8479
Ardisia crenata, isolation of ardisicrenosides E and F, triterpenoid pentasaccharides from roots of−, 11853
(+)-aromadendrene, constituent of oil of *Eucalyptus globulus*, rearrangement reactions of aromadendrane derivs to sesquiterpenes, 4733, 4745
Blighia sapida tree, total synth of hypoglycin A, α-amino acid from seeds of -, 12015
carapolides C-I and evodoulone, limonoids from extracts of seeds of *Carapa grandiflora* (Meliaceae), structures, 9343
castanospermine, synthetic functionalisation at C-6, synth of australine and analogues, 2131
Delphinium andersonii, structure of andersobine, diterpenoid alkaloid from −, 12283
Dianthus chinensis L., isolation of dianchinenosides E-H, triterpenoid saponins from −, structures, 12811
7-epizingiberene, bisabolane sesquiterpene from *Lycopersicon* wild tomato leaves, structure, 11123
espintanol, leishmanicidal and trypanocidal monoterpene from the spruce *Oxandra espintana*, synth, 8673
favelol, isofavelol and favelone, benzocycloheptenone derivs from the bark of *Cnidoscolus phyllacanthus*, structures, 5659
flavan-3-ols, synth by Mitsunobu reaction of *p*-oxygenated benzylic alcohols, effect of *para*-substituent, 5469
flavanoid- and phenylpropanoid glycosides, antitumour agents from leaves of *Lantana camara*, structures, 9439
foeniculoxin, phytotoxic geranylhydroquinone from *Phomopsis foeniculi*, 10371
Gelsenium elegans, synth of 11-methoxygelsemamide having a 1,2-secoindole system from sarpagine type indole alkaloid gardnerine, 8363
(+)-hedycaryol, germacrane sesquiterpene, and (+)-γ-eudesmol, synth from

(−)-guaiol, 4755
(±)-α-himachalene, sesquiterpene from essential oil of Himalayan cedar *Cedrus deodara Loud*, total synth involving [2+2] photoaddition and regioselective β-scission of alkoxy radicals, 7771
hosenkosides A-E, baccharane glycosides from the seeds of *Impatiens balsamina*, structure, 4973
11α-hydroperoxy diacetyl hederagenin, triterpenoid deriv from *Serjania triquetra* (Sapindaceae), isolation and relay synth, 3869
3-*epi*-hydroxymugineic acid, distichonic acid A and 2'-hydroxynicotianamine, phytosiderophores, total synth, 265
indole derivs from the fruit bodies of *Tricholoma sciodes* and *T.virgatum*, structures, 3571
(+)-ipomeamarone and (−)-ngaione from *Ipomea butatas* and *Eremophia latrobei* respectively, total synth from *sec, sec*-1,3-diol *via* hydrogen abstraction, 11647
(−)-isoseiridine, phytotoxin from *Seiridium cardinale*, total synth by cross-coupling of vinyl triflates with 9-alkyl-9-borobicyclo-[3,3,1]nonanes, 5489
lignan and chalcone glucosides from the roots of *Pyracantha coccinea*, structures, 5181
lignans and neolignans from stems of *Piper wightii*, 10579
Melodorum fruticosum, synth of melodienone and 7-hydroxy-6-hydromelodienone, antitumour heptenes isolated from−, 10491
Nothopanax davidii Harms (*Araliaceae*); structure of new triterpenoid saponin from −, use in prep of antiinflammatory Chinese medicine Shu Wu Jia, 11601
Oxera morieri, total synth of (±)-oxerine, originally isolated from−, 13575
4-phenyl-phenalenone-type phytoalexins from rhizomes of *Musa acuminata* infected with the fungus *Fusarium oxysporum*, synth from phenalen-1-one, structure, 10963
phytoecdysteroids from *Polypodium vulgare*, isolation and structure, 7247
phytosiderophores, 2'-deoxymugineic acid and nicotianamine, total synth from a β-tyrosine deriv, 9457
picrodendrins U-W, norditerpene lactones from the bark of *Picrodendron baccatum*, structure, 10859
pregnane glycosides from *Leptadenia reticula* Wight and Arn, antitumour activity, 789
Pseudostellaria heterophylla, pseudostellarins D-F, tyrosinase inhibitory peptides from the roots of−, structures, 9975
pseudostellarins A-C from roots of *Pseudostellaria heterophylla*, isolation and structure elucidation, 6797
pyropheophytin-anthraquinone linked molecules, synth as models for the study of photoinduced electron transfer, 4723
salicifoline, isosalicifoline and (−)-epinortrachelogenin, benzylidene-benzyl-γ-butyrolactone-type lignans from leaves of *Bupleurum salicifolium*, structures, 5203
Salvia leucantha; structure of salvigenane and isosalvipuberulan diterpenoids from aerial parts of−, 11593
seco-limonoids, potent new cell adhesion inhibitory compds from the root of *Trichilia rubra*, structure, 11369
shikonin from *Lithospermum erythrorhizon*, naphthoquinone pigment with antitumour, antibacterial and anti-inflammatory props, biotransformation by human intestinal bacteria, 3081
(±)-stemodin, tetracyclic diterpene from *Stemodia maritima* L, total synth *via* Pd^{2+}-promoted cycloalkenylation reaction, 3673
stereostructures of eudesmanolides from *Umbelliferae*, 5439
strigol from roots of *Gossypium hirsutum*; prep of 1-oxo-hydrindene-2-acetic and -propionic acids as precursors of strigol and its analogues, 2895
(+)-strigol and sorgolactone, germination stimulants of the genera *Striga* and *Alectra*, asymmetric synth of a key synthetic precursor of−, 6839
two new neolignans from stems and fruits of *Piper wightii*, structures, 2231, corrig. 6721
Tylophora asthmatica, synth of (±)-tylophorine found in − by intramolecular cycloaddition of an azide with an ω-chloroalkene, 12293

withajardins A, B, C and D, withanolides from leaves of *Deprea orinocensis*, structure and absolute configuration, 1217

Podands

and tripodands containing the *o,o'*-dihydroxybiphenyl subunit, novel family of iron sequestering agents, synth, 2077

see also Complexation, Host compds

Polyamines

polyamine analogues, synth of (*R,R*),(*S,S*) and meso-isomers of a tetraamine and conversion to a fluorinated polyamine analogue using the Mitsunobu reaction, 5579

Polycyclic aliphatic compds

$C_{24}H_{28}$ cage-functionalised alkenes, synth, characterisation and crystal density modelling, 1687

carbon-carbon bond cleavage *via* carbon centred radical in strained tricyclo-[5.2.1.$0^{2,6}$]decenes, synth of taxane related bridged eight membered rings, 921

(22*R*,23*R*,24*S*)-3β-hydroxy-5-ene-22,23-dihydroxy-24-methyl-cholestane, a brassinolide intermediate from 16-dehydropregnenolone acetate, 2523

substituted brendane derivs by palladium-copper mediated cyclisation of *endo*-5-vinyl-2-norbornene, subsequent oxidation to the quinane system, 539

see also Adamantanes, Cage compds, Cubanes, Quinanes

Polycyclic aromatic compds

aporphines or 5-oxoaporphines and 5-oxodehydroaporphines by radical cyclisation of bromobenzylisoquinolines and benzylisoquinol-3-ones respectively, 2107

by palladium-catalysed domino coupling reactions of aryl halides with norbornene and norbornene derivs, 383

cyclopentaphenanthrenones by Diels-Alder reactions of 4-acetoxy-2-cyclopenten-1-one and 2-bromo-4-acetoxy-2-cyclopenten-1-one with vinylarenes, 10359

lysergic acid derivs, synth by tandem radical cyclisations, 2183

12-methyl substituted benzo[*c*]phenanthridines by Bischler-Napieralski reaction of 1,2-diarylethylenenamides *via* 3-arylisoquinolium salts, 2207

5-(*p*-toluenesulfonyl)-5,6,13,14-tetrahydro-12(11*H*)-benzo[*c*]phenanthridinones, synth from 3-phenyl-4(3*H*)-isoquinolinone, 10971

triaromatic steroid hydrocarbons methylated at position 2, 3 or 6, synth from pregnenolone, cholesterol or stigmasterol *via* stera-3,5-dienes, molecular fossils of unknown biological origin, 1731

see also Calixarenes, Fullerenes, and the individual ring systems

Polycyclic heterocyclic compds

4-amino substituted and 4-unsubstituted 1,10-phenanthroline-3-carboxylic acid derivs, synth as potential DNA cleaving reagents, 889

by cyclisation of aminyl radicals generated from sulfenamide precursors, 1295

1,9-dimetalated β-carbolines, synth as versatile building blocks for the total synth of alkaloids, 12329

ellipticine (5,11-dimethyl-6*H*-pyrido[4,3-*b*]-carbazole, chlorination of – *via* its *N*-oxide, synth and selective acetylation of 5,6,11-trimethyl-5*H*-benzo[*b*]carbazole, 4811

geissoschizine isomers, synth using Claisen rearrangement, 3537

hydroxy-substituted 5-cyano-5*H*-benzo[*b*]-carbazole-6,11-diones, intermediates towards kinamycin antibiotics, synth based on palladium-promoted oxidative coupling, 10893

1,10-phenanthrolines by Friedländer condensation of 8-amino-7-quinolinecarbaldehyde with ketones, 10685

Polyenes

polyene cascade cyclisations mediated by $BF_3.CH_3NO_2$; synth of polycyclic intermediates *via* cationic initiation at non-functionalised 3° alkenes, total synth of (±)-taxodione, 9229

polyene esters by rearrangement of 3,3-bis(methylthio)-1-(arylcyclopropyl)-2-propen-1-ols, 255

Polymerisation

effect of hindered triorganoboranes on anionic butadiene polymerisations, 13829

Polymers

polystyrene/divinylbenzene resins, functionalisation with chiral fragments derived from tartaric acid, 7535

Polyols
by indium-mediated allylation of polyhydroxy aldehydes, 749
cyclohexane – such as (+)-fortamine and pseudosugars of the allo-, gulo, manno- and talo-series, synth from (1*R*,2*S*,3*R*,4*S*)-4-butyryloxy-2,3-isopropylidenedioxy-5-cyclohexen-1-ol, 7061
see also Carbohydrates, Cyclitols
Porphyrins
boron analogues of porphyrins, chemistry of, 12521
5,10,15-tris(3,5-di-t-butyl-4-hydroxyphenyl)-20-(4-pyridyl)porphyrin, alkylation of, 13477
dimeric manganese(III)-tetraarylporphyrins as catalysts for H_2O_2-promoted olefin epoxidation, 9025
manganese *meso*-tetra(4-sulfonatophenyl)-porphine, synth of a tumour-selective magnetic resonance imaging contrast agent, 8657
porphyrin building blocks for modular construction of bioorganic model systems, synth by reaction of the appropriate aldehyde with pyrrole, 8941
porphyrins tailored with eight facially-encumbering groups, solid-state light-harvesting complexes, synth from benzyloxybenzaldehydes, 11097
spheroidal bis-porphyrin, dual capped quadruply cofacial dimeric tetraphenylporphyrin, synth as a ligand designed to accept two catalytic metal ions in an isolated environment, 11339
β-substituted porphyrins by carbon-carbon-coupling reaction (Heck reaction) of metalated β-monohalosubstituted porphyrins and terminally substituted acetylenic derivs, 11933
trans-substituted *meso*-porphyrins by reaction of *meso*-substituted dipyrromethanes with aldehydes, 11427
zinc *meso*-tetraphenylporphyrin as shift reagent for NADH-models, 8227
see also Chlorins and derivs
Potassium and compds
cryptand[3.3.3]-potassium iodide complex, synth, 2721
Propellanes
[3.3.3]propellanes by rearrangement of dispiro[3.1.3.2]-, dispiro[3.0.3.3]-, dispiro[3.0.4.2]-, dispiro[2.0.3.4]- and dispiro[2.1.3.3]undecanes, 10867, 10879
Protecting groups
amide-based protecting/radical translocating (PRT) groups, generation of radicals adjacent to carbonyls by 1,5-hydrogen transfer reactions of *o*-iodoanilides, 7343
choice of carbonyl protecting group to control regiochemistry in the cycloaddition of nitrile oxides to β-substituted-αβ-unsaturated aldehyde equivalents, 7969
deprotective method for allyloxycarbonyl in aqueous media, 497
2-diphenylmethylsilylethyl (DPSE) as the protecting group for internucleotidic bonds in synth of oligodeoxyribonucleotides by phosphoramidite approach, 9255
lanthanum *tris*-β-diketonates for carbonyl group protection in hydrogenation, 6921
pyrylium salt sensitised photochemical deprotections of dithioacetals and ketals, 12821
regioselective deprotection of thiadiazine diacyclonucleoside by combined strategy of enzyme-catalysed hydrolysis-acylation, 13865
Proteins
apoprotein, synth and binding of simple neocarzinostatin chromophore analogues to the apoprotein, 1327
apoprotein-assisted cyclisation of neocarzinostatin chromophore, 1311
phosphonomethyl-phenylalanine and phosphotyrosine containing cyclic peptides as inhibitors of protein tyrosine kinase/SH2 interactions, 2691
reactivity of pyrrole pigments, mesobiliverdin IXα and mesobilirubin IXα bridged between the propionic acid substituents, 3967
Pummerer reaction
pummerer-generated substituted vinylthionium ions, allylation with, 9365
Purines
6-halopurines in palladium-catalysed coupling reactions with organotin and organozinc derivs, 9743
purine and pyrimidine analogues of 1,4-anhydro-2-deoxy-D-arabitol and 1,4-anhydro-2-deoxy-3-hydroxymethyl-D-arabito

l, ring expanded oxetanocin analogues, synth and biological evaluations, 10167
see also Nucleosides, Nucleotides

Pyranones
see Pyrones

Pyrans
3'-branched pyranosyl nucleosides, 1-[2',3'-dideoxy-3'-*C*-(hydroxymethyl)-α-D-erythro-pentopyranosyl]-thymine, 1189
2-carboxymethyl-2-hydroxy-tetrahydropyrans, synth from diketene and aldehyde, 2047
dihydropyrans from reaction of 1,3-dichloropropene with excess lithium powder *via* unsaturated 1,5-diols, 13269
3,4-epoxytetrahydropyran, ring opening reactions of, 1261
highly functionalised 2-amino-4-aryl-4*H*-pyrans, synth, 3509
3-nitro-5,6-dihydro-4*H*-pyran, reactions with organoalanes, synth of (*E*)-α,β-ethylenic aldehydes, 1871
substituted dihydropyrans, asymmetric synth by intramolecular heterocycloaddition of chiral vinyl ethers, 9037

Pyrazines
bicyclic pyrazinones *via* addition of heterocyclic amines to a nitro-alkene, 4887
2,7-substituted octahydro-2*H*-pyrido[1,2-*a*]-pyrazines, analogues of quinolizidine and piperazine drugs, synth, 1811

Pyrazoles
benzopyranopyrazole derivs by 1,3-cycloaddition of 3-nitro-2-phenyl-2*H*-1-benzopyrans to diazoalkanes, 4623
bis(3,5-diketo-1*H*-pyrazole)-[26]crown-12, synth as neutral and dianionic ligand, preparation of the disodium dipyrazolate salt and the mono- and di-nuclear complexes of Zn^{2+}, 4765
4-halo-3,5-dimethyl-1-nitro-1*H*-pyrazoles, nucleophilic behaviour of 1,8-diazabicyclo[5.4.0]undec-7-ene (DBU) and 1,5-diazabicyclo[4.3.0]non-5-ene (DBN) in reactions with-, 865
5-perfluoroalkylpyrazoles, 5-perfluoroalkylisoxazoles and 4-perfluoroacylisoxazoles, synth by reaction of β-perfluoroalkyl-β-dicarbonyls with hydrazonyl halides and halooximes, 8827
pyrazole derivs and αβ-unsaturated hydrazones from β-functionalised phosphonium salts, phosphine oxides and phosphonates, 12727

Pyrazolines
4- and 3-methylene-1-pyrazoline by reaction of diazomethane with allene, 5561
5-pyrazolone system, allylation of, kinetic vs. thermodynamic control and steric hindrance, 515
spiropyrazolines from tandem reactions of one mole of azide and three molecules of alkyl vinyl ketone, 12133

Pyridazines
4,5-dicyanopyridazine, [4+2]- and [2+4]-cycloaddition processes of – with 2,3-dimethylbuta-1,3-diene, 9189
2-methylpyridazin-3(2*H*)-ones bearing ethylsulfonyl, cyano and methoxycarbonyl groups at the 4- or 5-position, Diels-Alder reactions of, 5169
pyrido[1,2-*b*]pyridazinium-4-olate, photolytic behaviour, 4699

Pyridazinones
pyrazolo[3,4-*d*]pyridazinones from reactions of 6-chloro-4- and 5-hydrazino-2-phenyl-3(2*H*)-pyridazinones with Vilsmeier reagent, 12933

Pyridines
2-aminopyridines, synth by reaction of 6-aminopyrimidin-4-(3*H*)-one derivs with dimethyl acetylenedicarboxylate on the basis of Diels-Alder/RDA reactions, 10345
4-t-butylphenyl solubilised oligopyridines, synth, 7799
2,4-diaminopyrido[2,3-*d*]pyridines, inhibitors of dihydrofolate reductase, synth by reaction of cyanothioacetamide with sodium salts of 2-(hydroxymethylene)-1-cycloalkanones, 199
diarylpyridines and arylpyrimidines by ammonia-induced cyclocondensations of vinamidiniums, 8127
dihydropyridine and pyridine esters by reaction of 2-azadienes with *N*-cyclohexen-1-ylpyrrolidine and *N*-cyclopenten-1-ylpyrrolidine, 13709
1,2-dihydropyridines, catalytic double osmylation of, synth of aminoarabinose and aminoaltrose derivs, 1135
dihydropyridines, reduction of and subsequent acid cyclisation, construction of

structures related to Aspidospermatan skeleton, 5233
and 3-functionalised 5-chloro-6-methyl-2*H*-1,4-oxazin-2-ones from cycloaddition-elimination reactions with substituted acetylenic compds, 5211
Hantzsch 1,4-dihydropyridines, oxidation with potassium permanganate, 2479
homochiral bis(oxazolinyl)pyridine type ligands from (*S*)-valine, new ligands for cyclopropanation reaction of olefins, 13725
2'-hydroxyphenylpyridinemethanols, synth by metal-template *ortho*-regioslective alkylation of phenols with 2-, 3- and 4-pyridinealdehydes, 10587
metalated fluoropyridines and fluoroquinolines as reactive intermediates, regioselective synth, 1129
4-(4-methoxyphenyl)-2,6-diphenylpyridine and 1-methyl-4-(4-methoxyphenyl)-2,6-diphenylpyridinium perchlorate, crystal and molecular structures, 13155
NADH model in the pyrrolo[2,3-*b*]-pyridine series for reduction of *N*-acylenamines, 13135
4-(4-pyridyl)oxazoles from 4-acylaminomethyl-1-alkylpyridinium salts by heating with acetic anhydride, 10061
3-(thiazol-2'-ylidene)pyridines and fused derivs, expeditious route to synth using isothiocyanates, 5807
trifluoromethylpyridines, reactions with alkyllithium reagents, directing effects of the trifluoromethyl group, 12259

Pyridinium salts
4-acylaminomethyl-1-alkylpyridinium salts, reaction with acetic anhydride, synth of 4-(4-pyridyl)oxazoles, 10061
4-(4-methoxyphenyl)-2,6-diphenylpyridine and 1-methyl-4-(4-methoxyphenyl)-2,6-diphenylpyridinium perchlorate, crystal and molecular structures, 13155

Pyridones
gear effect in substituted pyridones by dynamic NMR, 2561

Pyrimidines, pyrimidinones
2'-*C*-alkynyl-2'-deoxy-1-β-D-arabinofuranosylpyrimidines *via* radical deoxygenation of t-propargyl alcohols in the sugar moiety, 10397
6-aminopyrimidin-4-(3*H*)-one derivs, reaction with dimethyl acetylenedicarboxylate (DMAD), synth of 2-aminopyridines on the basis of Diels-Alder/RDA reactions, 10345
2'-deoxy-2'-methylidene pyrimidine nucleosides, reactivity of - and synth of 3'-amino-2',3'-dideoxy-2'-methylidene pyrimidine nucleosides *via* rearrangement of allylic selenides, 689
diarylpyridines and arylpyrimidines by ammonia-induced cyclocondensations of vinamidiniums, 8127
2,5-*trans*-2',5'-*trans*-5,5'-dimethylperhydro-2,2'-bipyrimidine and heterocycles derived from its condensation with formaldehyde, synth and stereochemical assignment, 2497
from [4+2] cycloaddition reactions of 1,3-diaza-1,3-butadienes with haloketenes, 7579
[(2'*S*,3'*S*)-bis(hydroxymethyl)azetidin-1-yl] pyrimidine nucleosides, synth as antiviral agents, 13335
mechanism of halogen migration during metalation of pyrimidines, unusual halogen-lithium exchange with LTMP, synth of Leshmaniacides, 10299
purine and pyrimidine analogues of 1,4-anhydro-2-deoxy-D-arabitol and 1,4-anhydro-2-deoxy-3-hydroxymethyl-D-arabitol, ring expanded oxetanocin analogues, synth and biological evaluations, 10167
pyrido[2,3-*d*]pyrimidine derivs with calcium channel antagonist activity, synth by reaction of arylmethyleneacetoacetates with aminopyrimidines, structures, 8085
pyrido[3',2':4,5]thieno[3,2-*d*]pyrimidine derivs, iminophosphorane-mediated synth with heterocumulenes, 6705
pyrimidine isostere of the *N*-methyl-D-aspartate antagonist SDZ EAB 515, synth, 5735
9-*H*-pyrimido[4,5-*b*][1,4]diazepine derivs from 4,5-diaminopyrimidines and ethyl pyruvate, 13511
stannylation in the electrophilic 2- and 4/6-pyrimidine position and use of stannylpyrimidines in coupling and tin-lithium exchange reactions, 275
substituted 2-thiouracils and pyrimidine-2-thione, oxidation with ozone and 3,3-

dimethyl-1,2-dioxirane, 3259
7- and 5-substituted triazolo[1,5-*a*]pyrimidines by reaction of vinylogous iminium salts with 3-amino-1,2,4-triazole, 12113
See also Nucleosides, Nucleotides, Uracils
Pyrolysis
of esters, substituent effects by AM1 calculations, 161
of malonanilic acid ethyl esters, synth of symmetric dianilides of malonic acids, 10331
Pyrones
(+)-altholactone, *cis*-fused tetrahydrofurano-2-pyrone from *Polyalthia* and *Goniothalamus giganteus*, total synth from diethyl L-tartrate, 11315
dihydropyrone derivs by hetero Diels-Alder reactions catalysed by (acyloxy)-borane, 979
dihydropyrone derivs from asymmetric hetero Diels-Alder reaction catalysed by stable and easily prepared (acyloxy)-borane (CAB) complex, 4555
epoxy-pyronene from δ-pyronene using metachloroperbenzoic acid, use in synth of cyclocitrals, ionones and terpenes, 3381
Pyrroles
bilirubin analogues with *N,N*-methylene bridges, synth and properties, 9919
2,5-dihydropyrroles by cycloaddition of benzotriazolylmethylaminosilanes with dipolarophiles, 12571
dihydropyrroles from dianions of acyclic β-(monoalkylamino)-αβ-unsaturated ketones *via* γ'- and ε-nitro-β-enaminoketones, 9831
discorhabdin C, batzelline C and isobatzelline C, pyrroloquinoline alkaloids, synth and cytotoxic study of intermediates, 2017
2-fluoro-11-hydroxy analogue of porphobilinogen by direct fluorination of the pyrrole ring with xenon difluoride, inhibitor of porphobilinogen deaminase, 6181
N-(2-hydroxymethylphenyl)pyrrole, metalation and electrophilic substitution of, ring construction of pyrrolobenzoxazepine, 2071
meso-substituted dipyrromethane by reaction of an aldehyde with excess pyrrole, subsequent reaction with aldehyde to yield *trans*-substituted *meso*-porphyrins, 11427
methano, ethano and 1,3-propano *N*10,*N*11-bridged dipyrrinones, synth from 3,4-dimethylpyrrole-2-aldehyde, spectroscopic properties, 1955
6,11b-methanopyrrolo[2,3-*e*][1]benzazocine, tetrahydroquinoline deriv, synth by reaction of congested α-(*O*-nitrophenyl)-ketones with tris(dimethylamino)-methane, 9769
8-methoxy-1,3,4,5-tetrahydropyrrolo[4,3,2-*de*]quinoline from 6-methoxy-4-methylquinoline, 7879
NADH model in the pyrrolo[2,3-*b*]pyridine series for reduction of *N*-acyl-enamines, 13135
pentapyrrole analogues of bilirubin and biliverdin, synth and properties, 8579
pyrido- and pyrrolo[2,3,4-*kl*]acridines, marine related alkaloids, from β,β'-diaminoketones and a variety of cyclohexanediones and quinones, 12959
reactivity of pyrrole pigments, mesobiliverdin IXα and mesobilirubin IXα bridged between the propionic acid substituents, 3967
tilivalline, pyrrolo[2,1-*c*][1,4]benzodiazepine from *Klebsiella pneumoniae* var. *oxytoca*, effect of zinc halides on stereoselectivity of Mannich cyclisation in synth, synth and epimerisation of, 9775, 9781
Pyrrolidines, pyrrolidinones
6-amino-1,4,6-trideoxy-1,4-imino-D-mannitol dihydrochloride, synth as inhibitor of α-mannosidase, 1033
aracemic 2-lithio-*N*-methylpiperidine and 2-lithio-*N*-methylpyrrolidine as configurationally stable α-amino organolithiums, synth, 6077
(*R*)-2-aryl- and (*R,R*)-2,5-bis(aryl)pyrrolidines, synth by addition of Grignard reagents to chiral imines and 1,3-oxazolidines, 1083
2,5-dimethylpyrrolidines and 2,6-dimethylpiperidines by reductive amination of 2,5-hexanedione and 2,6-heptanedione with hydride reagents, 4709
α,α-diphenylpyrrolidinemethanol and borane complexes generated using the

$I_2/NaBH_4$ system, use in asymmetric reductions, 6411
α,α'-disubstituted piperidines and pyrrolidines, *cis*- and *trans*-configurations by GC-FTIR, application to alkaloids, 11329
2,5-disubstituted pyrrolidines from (2*R*)- or (2*S*)-2-t-butoxycarbonylamino-3-phenylsulfonyl-1-(2-tetrahydropyranyloxy) propane and homochiral glycidyl triflate, 7093
α-lithio pyrrolidine, effect of Li-O *versus* Li-N complexation on configurational stability of chiral lithio α-amino carbanions, 6089
α-methylene-2-piperidinones and 2-pyrrolidinones by reaction of γ- and β-aminoalkynes with hydrogen and carbon monoxide, 2533
pyrrolidine enamines of cyclic and acyclic 3,4-dioxobutanoic acid derivs, reactions with dimethyl acetylenedicarboxylate, atropoisomerism, 13857
pyrrolidines and 2,5-dihydropyrroles by cycloaddition of benzotriazolylmethylaminosilanes with dipolarophiles, 12571
pyrrolidines from 1,3-cycloaddition of azomethine ylids generated from 2-(t-butyl)-3-methylimidazolidin-4-one, 189
pyrrolidines and piperidines by PET promoted cyclisations of 1-[*N*-alkyl-*N*-(trimethylsilyl)methyl]amines tethered to proximate olefin, mechanistic and synthetic perspectives, 8185
$Rh_2(5S\text{-MEPY})_4$ as catalyst for cyclopropanation of *N*-allylic and *N*-homoallylic diazoacetamides, 4519
5-substituted- and 3,5-disubstituted-2-formyl-pyrrolidine derivs, key D-ring fragments of enantiomeric pairs of quinocarcin and 10-decarboxyquinocarcin, synth, 6221, 6239
2,3,4-trisubstituted pyrrolidine derivs by samarium(II) iodide-mediated ring closures of substituted *N*-allyl derivs or *N*-propargyl substrates from L-serine, 9411, 9425

Pyrrolines, pyrrolinones
D^2-pyrrolin-5-ones by reaction of *N*-substituted enamines with phenylglyoxal or glyoxal, regiochemistry, 7849
pyrrolines, pyrrolizidines and their ring homologues by α-cyclisation of enamines with dimethyl acetylenedicarboxylate, 7075

Pyrrolizines, pyrrolizidines
pyrrolines, pyrrolizidines and their ring homologues by α-cyclisation of enamines with dimethyl acetylenedicarboxylate, 7075
pyrrolizidin-2-one and 3-phenyl substituted indolizidin-2-ones by rearrangement of 5-benzoyl substituted isoxazolidines, intermediates in route to constrained NK1 receptor antagonists, 12713
pyrrolizidine oximes 222 and 236, alkaloids of poison-frog *Dendrobates pumilio*, synth and structure, 6129
pyrrolizidines and other polycyclic heterocycles from cyclisations of aminyl radicals, 1295

Pyrylium ions
2,4,6-triphenylpyrylium tetrafluoroborate as sensitiser in photooxygenation of 1,1- and 1,2-diarylethylenes, involvement of oxirane intermediates, 8773

Quinanes
by Baeyer-Villiger ring cleavage of brendane derivs, 539
(−)-$\Delta^{9(12)}$-capnellene, synth from (−)-2-methyl-4-trimethylsilyl-2-cyclopenten-1-one as intermediate in triquinane synth, 655
(±)$\Delta^{9(12)}$capnellene, triquinane marine sesquiterpene, total synth using a Pd-catalysed bis-cyclisation step, 403

Quinazolines, quinazolinones
dihydroindoloquinazoline and dihydroquinazoline derivs, electrochemical oxidation of, 12773
quinoline, 4-quinazolinone–isoquinoline and *N*-methyloxindole, reaction with sodium naphthalenide, a single-electron transfer reagent, synth of dimeric and trimeric products, 9079

Quinolines
8-amino-7-quinolinecarbaldehyde, synth from 8-hydroxyquinoline and subsequent Friedländer condensation with ketones to give 1,10-phenanthrolines, 10685
(*rac-erythro*)-α-[(*SR*)-1-azabicyclo[2.2.2]oct-1-yl]-2,8-bis(trifluoromethyl)quinoline-4-

methanol, a quinuclidinyl analogue of antimalarial agent mefloquine, synth, 3327
by coupling reactions between aryltin compds and α-bromoenone derivs, intermediates in route towards synth of dynemicin A, 5621
discorhabdin C, batzelline C and isobatzelline C, pyrroloquinoline alkaloids, synth and cytotoxic study of intermediates, 2017
furo[2,3-*f*]quinoline-4,5-diones from the reactions of 2-ethoxybut-2-enal *N,N*-dimethylhydrazone with quinoline-5,8-diones or benzo[1,2-*b*]furan-4,5-diones, 8457
indolylquinolines, synth using indole or its 5-substituted derivs as substrates under Friedel-Crafts acylation conditions, 10803
(+)-(*R*)- and (−)-(*S*)-lunacridine, quinoline alkaloids, synth by resolution of prenyl bromohydrin esters and derivs, 11219
metalated fluoropyridines and fluoroquinolines as reactive intermediates, regioselective synth, 1129
6,11b-methanopyrrolo[2,3-*e*][1]benzazocine , tetrahydroquinoline deriv, synth by reaction of congested α-(*O*-nitrophenyl)-ketones with tris(dimethylamino)-methane, 9769
8-methoxy-1,3,4,5-tetrahydropyrrolo[4,3,2-*de*]quinoline from 6-methoxy-4-methylquinoline, 7879
quinoline, 4-quinazolinone–isoquinoline and *N*-methyloxindole, reaction with sodium naphthalenide, a single-electron transfer reagent, synth of dimeric and trimeric products, 9079
2,5,8(1*H*)-quinolinetriones, regioselectivity of the Diels-Alder reactions of, 7923
quinolonecarboxylic acid, DU-6859, synth of (1*R*,2*S*)-2-fluorocyclopropylamine component, 3889, 3905

Quinolizidines
2,7-substituted octahydro-2*H*-pyrido-[1,2-*a*]pyrazines, analogues of quinolizidine and piperazine drugs, synth, 1811
cis- and *trans*-1-(3'-substituted-propyl)-benzo[*a*]quinolizidinones and quinolizidines, synth from 1-methyl-6,7-dimethoxy-3,4-dihydroisoquinoline, 4873

Quinones
4-amino-1,2-naphthoquinones, photoaddition reaction with alkenes, synth of 1*H*-benz[g]indole-4,5-diones, 8293
2-amino-1,4-naphthoquinone, reaction with β-dielectrophiles, synth of 2- and 4-oxo-1*H*-1-azaanthracene-9,10-diones, 12941
chloranil, photoinduced addition reactions with alkenes − factors influencing the reaction site, 1199
diester-calix[4]arenediquinone receptor, synth, metal, ammonium and alkyl ammonium cation coordination chemistry and electrochemical recognition studies, 931
dihydrobenzothiazinequinones by biomimetic oxidation of the antimelanoma agent 4-*S*-cysteaminylphenol and related catechol thioethers, 8757
1,2- − and diols, reactions with cyclic chlorophosphites and arsenites, synth of phosphocin oxides, 6989
foeniculoxin, phytotoxic geranylhydroquinone from *Phomopsis foeniculi*, 10371
heterocyclic quinones, *N*-oxidation of −, synth of *N*-oxides of azaanthraquinones, 9505
hydroquinone ethers, selective nitration *versus* oxidative dealkylation of − with nitrogen dioxide, 6727
hydroxy-substituted benzo[*b*]carbazoloquinone cyanamides, intermediates towards kinamycin antibiotics, synth based on palladium-promoted oxidative coupling, 10893
imidazole and benzimidazole addition to −, formation of *meso*- and d,l isomers of 2,3-bis(benzimidazol-1'-yl)-1,4-dihydroxy benzene, 12489
nakijiquinones A and B, antifungal sesquiterpenoid quinones with an amino acid residue, isolation from Okinawan sponge *Spongiidae*, structures, 8347
peyssonol A and B and hyatellaquinone, sesquiterpene hydroquinones from the alga *Peyssonnelia* sp. and *Hyatella intestinalis* sp., structures, 4179
phenyl quinones, transition-metal mediated regioselective synth *via* sequential benzannulation and cross coupling

reactions, 2003
pyropheophytin-anthraquinone linked molecules, synth as models for the study of photoinduced electron transfer, 4723
p-tolylsulfenyl, *p*-tolylsulfinyl and *p*-tolylsulfonyl naphthazarins (5,8-dihydroxy-1,4-naphthoquinone), synth, 5013
trapping of the quinone imine intermediate in reaction of 1-(4-methoxyphenyl)-azetidin-2-ones with cerium(IV) ammonium nitrate (CAN), 4185

Quinonoid compds
quinoxalino-*o*-quinodimethane, generation from quinoxalino-3-sulfolene and chemical reactions of, 10721

Quinoxalines
2-(4-nitrophenoxy)quinoxaline, synth and reactions with hydroxide ion in micellar systems, 1927
quinoxalino-*o*-quinodimethane, generation from quinoxalino-3-sulfolene and chemical reactions of, 10721

Radicals and radical reactions
2-acyloxyalkyl radicals from 2-acyloxyalkyl iodides using tributyltin hydride, 5131
β-acylvinyl intermolecular radical additions to double bonds, synth of functionalised (*E*)-αβ-unsaturated carboxylic acids, 6715
alkyl and malonate radical cyclisations of methylenecyclopropane derivs, 11267, 11289
amide-based protecting/radical translocating (PRT) groups, generation of radicals adjacent to carbonyls by 1,5-hydrogen transfer reactions of *o*-iodoanilides, 7343
amidoalkyl radicals, Mn(III)-promoted addition to olefins, ultrasound effects, 13847
aminyl radicals, generation from sulfenamides by reaction with tributyltin hydride, subsequent cyclisation to pyrrolizidines, 1275, 1295
anodic oxidation of aryl propargyl and aryl allyl ethers at a platinum electrode, 6387
2'- or 3'-*C*-branched nucleosides and 3'-bis-*C*-substituted-3'-deoxy-3'-dehydro-[3.3.0]-α-fused thymidines by intramolecular radical trapping by tethered acetylenes, 5255, 5273
cyclobutyl bond cleavage by adjacent ketyl radical generated under PET conditions, 3835, 3843
electron transfer oxidation of enol derivs of 2,3-dihydrobenzopyran-4-ones, 7635
evidence for direct attack of phenylalanine by flavinoxy and $HO^{\cdot}$ radicals, 5287
flavin radicals, spontaneous formation and subsequent reactions of flavin radicals in the presence of phenylalanine and O_2 and/or H_2O_2, hydroxylation of aromatics, 6759
free radical approach to cyclopentanone and spirocyclic systems; development of a 1,5-allylic abstraction-cyclisation sequence, 13523
free radical ring expansion of cyclobutanones, synth of *cis*-fused cycloheptanones, 12579
generation of radicals by photo-induced electron transfer and fragmentation of the radical cation, 575
high temperature radical cyclisation anomolies in the tandem enediyne-bis-radical cyclisation, 4635
α-imide substituted radicals generated from the corresponding Barton esters, stereoselective reactions of, 7029
iminyl radicals, generation by addition of tributylstannane to sulfenylimines or from derivatives of oximes, reactivity, 1745, 1757, 1769
4-ketobutyl radicals by rearrangement of 2-(vinyloxy)alkyl radicals, mechanism, 12305
ketyl radicals of acetone, reaction with diethyl phosphoric acid, synth of diethyl isopropyl and isopropenyl phosphate, 1125
occurrence of an electrophilic phthalonimidyl radical in photochemical reactivity of phthalonimide, 4987
photochemical reactions of 9,10-anthracenedicarbonitrile and 1,4-naphthalenedicarbonitrile in acetonitrile in the presence of bases, 2115
protic-acid or radical cation catalysed processes for aminium salt induced reactions of aromatic olefins, 12685
radical cyclisation of *gem*-chlorofluoroheptenols, synth of monofluorocyclo-

hexanols, 12361
radical cyclisations of dienes and enynes using phosphorus- and sulfur-centred radicals, 13533
radical cyclisations on sugar templates, synth of fused furanopyranes, 5369
radical deoxygenation of t-propargyl alcohols in the sugar moiety, synth of 2'-*C*-alkynyl-2'-deoxy-1-β-D-arabinofura nosylpyrimidines, 10397
radical intermediates in the reactions of aryllithium compds with carbon monoxide, electron transfer mechanism, 4651
radical-based deoxygenation of aliphatic alcohols *via* thioxocarbamate derivs using phenyl isothiocyanate, 10193
radical-chain addition of benzenethiol to allenic esters, EPR and product studies, 4001
regiospecific radical annulation strategy to functionalised chiral bicyclo[3.3.1]-nonanes, 8781
α-silylmethyl amine radical cation as intermediate in PET promoted cyclisation of 1-[*N*-alkyl-*N*-(trimethylsilyl)-methyl]amines tethered to proximate olefin, synth of pyrrolidines and piperidines, 8185
α-substituted amines by trapping of α-amino radicals generated by *N*-(2-iodobenzyl) and *N*-(2-iodobenzoyl)'protected' amines, 13697
tandem radical cyclisations for synth of lysergic acid derivs, 2183
tertiary pinanyl adduct radicals from decomposition of β- and γ-unsaturated peroxides derived from pinane, 9335
transition metal-catalysed chlorine transfer cyclisations of carbon-centred glycine radicals, route to cyclic α-amino acids, 1907

Rearrangements
of 5-benzoyl substituted isoxazolidines, synth of 3-phenyl substituted indolizidin-2-ones and pyrrolizidin-2-one, 12713
of α-chloro-propiophenones, synth of α-arylpropionic acids, studies on chirality transfer and synth of (*S*)-(+)-ibuprofen and (*S*)-(+)-ketoprofen, 1243
of (9-alkyl-9-fluorenyl)-methyllithium (or cesium) and 2,2-diphenyl-3,3-dimethyl-butyllithium, 5971
of a β-amino sulfoxide under Pummerer reaction conditions, synth of an unexpected alcohol, 13501
of aromadendrane derivs to hydronaphthalene compds with a maaliane skeleton and to humulanes and cadinanes, 4733, 4745
of bishomoallyllithiums derived from reductive lithiation of bishomoallyl phenyl sulfides, 12793
in the cerium(IV) and manganese(III) oxidations of substituted naphthalenes and the NIH shift mechanism, 3575
Claisen – of *N*-silyl ketene *N,O*-acetals generated from allyl *N*-phenylimidates, synth of γ,δ-unsaturated anilides, 3951
Claisen - in the prep of geissoschizine isomers, 3537
Claisen, theoretical and experimental studies of the 3-aza-Claisen rearrangement, 10671
Cope – of *N*-alkyl-*N*-allyl enamines, stereochemical consequences of, 4105
and cyclisation of phenyliodoniophenolates derived from 1,3-dihydroxybenzene derivs, 11541
DABCO catalysed – of allylic esters, mechanistic and synthetic aspects, 12001
of 2,3-disubstituted benzofuran epoxides prepared by dimethyldioxirane oxidation, synth of benzofuranones, 11441
ester-enolate Claisen – of chelated *N*-protected cycloalkenyl glycinates, synth of cyclic γ,δ-unsaturated amino acids, 12895
Favorskii – of chloro-enol-lactone derived from diterpene epicandicandiol, synth of gibberellin A12 isomer, 12643
of hemiketals derived from 3,3-dimethyl-7-methylenecycloocta-1,5-dione, synth of substituted cyclooctadienones and δ-valerolactones, 7461
highly selective enolization method for heteroatom substituted esters and its application to the Ireland ester enolate Claisen rearrangement, 3099
of lithioalkyl allyl ethers, *cis, trans*-selectivities and [2,3]shifts in their lithiomethyl analogues, 13417
Meerwein Eschenmoser [3,3] sigmatropic – involving methoxymethyleniminium salts and lithium alkoxides derived from

allyl alcohols, synth of 3-mono and di-substituted lactams, 4025
of 14-mesyloxy-*ent*-beyer-15-enes, 10761
of 3,3-bis(methylthio)-1-(arylcyclopropyl)-2-propen-1-ols, synth of functionalised cyclopentenes and polyene esters, 255
of dispiro[3.1.3.2]-, dispiro[3.0.3.3]-, dispiro[3.0.4.2]-, dispiro[2.0.3.4]- and dispiro[2.1.3.3]undecanes to [3.3.3]-propellanes, 10867, 10879
ortho–ortho 2,4-cyclohexadiene-1-one – of the reaction product of 2,6-di-t-butyl-4-chlorophenol and 2,6-dichlorobenzoquinone *N*-chloroimine, mechanism, 8809
of β-oxido carbenoid derived from ligand exchange reaction of the sulfinyl group of α-chloro β-hydroxy sulfoxide; one-carbon homologation of carbonyl compds, 11839
2-oxonia – in π-cyclisation of methyl 2-acetoxy-2-(3-alken-1-oxy)acetates, 7115, 7129
Payne - of αβ-epoxycyclopentanols contained in a rigid tricyclic system, 3473
of *N*-(5-phenyl-1,2,4-oxadiazol-3-yl)-*N'*-arylformamidines into 1-aryl-3-benzoylamino-1,2,4-triazoles, 7315
of α-pinene and β-ionone oxides catalysed by aminium salts, 9097
[3,3] and [2,3] rearrangements of 11-substituted estradienedione derivs, synth of 19-substituted androstenedione analogues, 8491
ring expansion of 4-(1-pyrrolo)cyclobutenones to indolizine-5,8-diones, key step in synth of (±)-septicine from dimethyl squarate, 6173
selectivity between pinacolic - and intramolecular displacement in the acid-promoted epoxide ring opening of 6-*exo*-cyano-3,8-dioxabicyclo[3.2.1.$0^{2,4}$]oct-6-*endo*-yl esters, 2469
thermal – of 4-acylmethyl-2-chloro-4-hydroxy-2-cyclobutenone to γ-acylmethylenetetronate, 7783
thermo- and polymorphism of 2,2'-bis-*O*-(*N,N*-dimethylthiocarbamato)-1,1'-binaphthalene, synth of 1,1'-binaphthalene-2,2'-dithiol, 3463
of trisubstituted epoxides to aldehydes or ketones, 3663
of 2-(vinyloxy)alkyl to 4-ketobutyl radicals, mechanism, 12305
Wagner-Meerwein – in reaction of *endo*-tricyclo[6.2.1.$0^{2,7}$]undeca-4,9-diene-3,6-dione with iodine(III)-containing electrophiles, 9933
Wittig –, [1,2]- – of enantio-defined α-alkoxyalkyllithiums, structural requirements and steric course at the lithium bearing terminus, 5927
Wittig - for construction of the bicyclic core of calicheamicin γ1^{I} and esperamicin-A_1, 1469
[2,3]-Wittig – of lithiated diallyl ethers, influence of the geometry of the carbanionic moiety on the non-induced diastereoselectivity of, 3687
Wittig – of lithioalkyl allyl ethers; exhibition of different *cis, trans*-selectivities than [2,3] shifts in their lithiomethyl analogues, 13417
Wittig, for prep of conjugated *cis*-caradienes, 13181
Wittig, transition structures for [2,3]– – of stabilised and unstabilised allyloxy methyl anions; rationale for the dichotomous sense of stereoselection, 5917

Receptors
diester-calix[4]arenediquinone receptor, synth, metal, ammonium and alkyl ammonium cation coordination chemistry and electrochemical recognition studies, 931
(–)-9-nor-9β-hydroxyhexahydrocannabinol (HHC), synth and activity of conformationally restricted hybrids of CP-55,940 and HHC, 2671
interleukin-6 receptor, isolation of erylusamines A-E from marine sponge *Erylus placenta* as receptor antagonists, 1105
NK_1 receptor; synth of 3-phenyl substituted indolizidin-2-ones and pyrrolizidin-2-one by rearrangement of 5-benzoyl substituted isoxazolidines on route to constrained NK_1 receptor antagonists, 12713
pyrimidine isostere of the *N*-methyl-D-aspartate antagonist SDZ EAB 515, synth, 5735
(±)-surugatoxin and neosurugatoxin from toxic ivory shell *Babylonia japonica*, strong affinity for nicotinic receptors,

synth, 2729, 2753
see also Molecular recognition
Reduction
of α-trialkylsiloxy nitriles with diisobutylaluminium hydride (DIBAH), synth of α-trialkylsiloxy aldehydes and their derivs, 2821
of *N*-acyl-enamine derivs with a NADH model in the pyrrolo[2,3-*b*]pyridine series, mechanism, 13135
alkylative –, geminal dialkylation and olefination of aliphatic aldehydes; reaction of *gem*-bistriflates with higher order dialkylcyanocuprates, 13231
asymmetric – utilising α,α-diphenylpyrrolidinemethanol and borane complexes generated using the $I_2/NaBH_4$ system, 6411
asymmetric hydrogen-transfer – of ketones with isopropanol catalysed by ruthenium complexes with chiral Schiff base ligands, 4347
baker's yeast – of α-hydroxy ketones and derivs, steric course, 10539
of 2-t-butylcyclohexanone with diisobutylaluminium-2,6-di-t-butyl-4-methylphenoxide, study of temperature dependence of the diastereoselectivity, 6819
of chiral 2-*p*-tolylsulfinylcycloalkanones with DIBAL and DIBAL/$ZnCl_2$, 9355
of cyanoketones and *N*-cyanoamines, fate of the cyano group, 8203
of cycloalkanones by alkali metals in ammonia, counterion effect on stereochemistry, 3149
diastereoselective – of β-sulfinyl enamine with sodium borohydride, synth of β-amino sulfoxide and subsequent rearrangement to alcohol, 13501
of dihydropyridines and subsequent acid cyclisation, construction of structures related to Aspidospermatan skeleton, 5233
electrochemical – of polyhalogenonitrobenzenes, mechanistic studies, example of radical anion dimerisation, 6913
electrochemical – of pristinamycin I^A and related streptogramins, synth of des-(3-hydroxypicolinoyl)-pristinamycin I^A, 6307
of euryspongiols from the sponge *Euryspongia* sp., 3813
of fumarate and derivs with resting cells of *Clostridium formicoaceticum*, prep of (*S*)-2-substituted succinates, 13631, 13641
of 5-methoxyindoles, route to 5-hydroxyindoles, 13433
of phosphonodithioformates, synth of α-phosphonyl thiols and hemidithioacetals, 10277
reductive activation of arenes; alkylation of 9-cyanoanthracene two-electron reduction products in liquid ammonia, 10011
reductive cleavage of allylic ketals by an arene-catalysed lithiation, synth of masked lithium homoenolates, 3437
reductive decyanation of nitriles with lithium and 4,4'-di-t-butyl-biphenyl in a Barbier-type reaction, synth of organolithium reagents, 3447
reductive opening of azetidines with lithium, synth of 3,*N*-dilithioalkylamines, 5775
selective - of αβ-unsaturated ketones with Pd/C using limonene as the hydrogen source, 973
sodium borohydride – of coumarin encapsulated in β-cyclodextrin, selectivity in, 12979
yeast reductions of fluorinated β-diketones, synth of corresponding ketols, stereochemistry of, 11995
zinc - of 1,2-dibenzocycloalkanes, effect of ring strain on, 2949
see also Deoxygenation, Hydrogenation
Regiochemistry
of the metalation of alkyl(alkythio)-benzenes with butyllithium or with the superbase mixture of butyllithium with potassium t-butoxide, 6037
regioassignments of ethyl cyanoimidazolecarboxylates by nOe studies on monocyanoimidazoles, 2641
regiochemical control of the ring opening of *cis*- and *trans*-oxides derived from 3-benzyloxycyclohexene and 2-benzyloxy-5,6-dihydro-2*H*-pyran, 12999
reversing the – in 1,3-dipolar cycloaddition of nitrile oxides by modification of dipolarophiles, 7969
and stereochemistry of addition reaction of of *N*-benzylhydrazine to sugar δ-enlactones, 7219
substituent field effects on – of reaction

of 4-methyl-1,2,4-triazolinedione with allylic ethers and sulfides, 8569
Regiocontrol
in nucleophilic ring opening of chiral epoxides of chemoenzymatic origin, 12245
in reductive ring opening of epoxides derived from asymmetrized 2-alkenyl-1,3-propanediols, 2219
of the ring opening of 1,2-epoxides; opening reactions of 3,4-epoxytetrahydropyran, 1261
Regioselection
in alkylations of 2-substituted-4-methylbenzimidazoles, 5535
cobalt(II) chloride catalysed regioselective allylation of 1,3-dicarbonyl compds, 9145
in $CuCl_2$-induced photooxidation of olefins, 7375
in Diels-Alder reactions of 2,5,8(1*H*)-quinolinetriones, 7923
and enantioselective synth of homoallylic alcohols by reaction of allylic sulfides, bearing two different leaving groups, with organocopper reagents by selective substitution of the heterocyclic moiety, 7283
in intermolecular 1,3-dipolar cycloadditions of münchnones with acetylenic dipolarophiles, 93
palladium-catalysed allylation of fulvenes, 61
palladium-catalysed carbonylation of allylamines, synth of $\beta\gamma$-unsaturated amides, 453
in reaction of diazomethane with allene, synth of 4- and 3-methylene-1-pyrazoline, 5561
regio- and stereoselection in 1,3-dipolar cycloaddition reactions of ethyl diazoacetate to 3-substituted 2*H*-1-benzopyran-2-ones, 13023
regioselective catalytic intramolecular hydrosilation and hydroacylation, 4335
regioselectivity in transformation of benzo[*a*]pyrene 4,5-oxide and 3-methylcholanthrene 11,12-oxide to corresponding β-amino-alcohol derivs, 8505
transition-metal mediated regioselective synth of phenyl quinones *via* sequential benzannulation and cross coupling reactions, 2003
Resins
ion-exchange resin support for synth of 1-aryl-3,3-disubstituted triazines, 9107
perfluorinated resinsulfonic acids (Nafion-H), transformation of 1,2-diols over –, 8195
polystyrene/divinylbenzene resins, functionalisation with chiral fragments derived from tartaric acid, 7535
tetraethyleneglycol diacrylate-crosslinked polystyrene resin as solid support for gel-phase peptide synth, 6681
Resolution
of 2-acyl-3-hydroxymethyl-4-butanolide by lipase-catalysed acylation with acetic anhydride and subsequent preparation of IM-2, the autoregulator from *Streptomyces* sp. FRI-5, 10849
amino acids derived from reaction of aryl-isocyanates with ethyl (*S*)-(–)-lactate for resolution of racemic bases of ephedrine and α-aryl ethylamine series, 10309
of (1,1'-binaphthalene)-2,2'-dithiol by enzyme catalysed hydrolysis of the corresponding *S,S'*-dipentanoate, 7109
enzymatic – of epoxides, 8895
kinetic – of 5-alkoxy-2(5*H*)-furanones using a chiral aminoalcohol catalysed 1,4-addition of arylthiols, 4775
kinetic – of racemic methyl phenyl sulfoxide derived from sulfides, 9609
predictions of which diastereoisomeric salt precipitates during an optical resolution *via* diastereoisomeric salt formation, 6907
of prenyl bromohydrin esters and derivs; synth of (+)-(*R*)- and (–)-(*S*)-lunacridine quinoline alkaloids, 11219
Retinoids
two pentacyclic analogues of the retinoid temarotene, synth using palladium catalysed coupling of a stannylated pyridine with an aromatic triflate, 2459
Rhenium and compds
methyltrioxorhenium(VII) as catalyst for sulfoxidations with hydrogen peroxide, 13121
Rhodium and compds
dirhodium(II) complexes with four chiral pyrrolidinone or oxazolidinone ligands as catalysts for cyclopropanation of *N*-allylic- and *N*-homoallylic diazoacetamides,

1665
$Rh_2(5S\text{-MEPY})_4$ and $Rh_2(4S\text{-MEOX})_4$ as catalysts for cyclopropanation of *N*-allylic and *N*-homoallylic diazoacetamides, 4519
$[Rh(CO)_2Cl]_2$, reaction with 5,6-dithioacenaphthene, synth of 1,2,8,9-tetrahydrocyclohepta[1,2,3-*fg*:4,5,6-*f'g'*]diacenaphthylene-5-one, 2361
rhodium carbenoid mediated O-H insertion reaction of phenols with trialkyl 2-diazophosphonoacetates, synth of trialkyl 2-aryloxyphosphonoacetates, 3177
rhodium carbenoid mediated O-H insertion reactions; O-H insertion *vs.* H-abstraction and effect of catalyst, 3195
rhodium(II) catalysed addition of nitriles to the corresponding diazo compd, synth of 4-functionalised oxazoles, effect of ligand on rhodium, 3761

Ring transformations
of 4-acylmethyl-2-chloro-4-hydroxy-2-cyclobutenone to γ-acylmethylenetetronate by thermal rearrangement, 7783

Ruthenium and compds
BINAP-Ru(II) complexes in hydrogenation; organometallic ways for multiplication of chirality, a summary of the work of R. Noyori, 4259
ruthenium tetroxide, reaction with 7,9(11)-diene steroids, synth of polyoxygenated steroids, 4835
ruthenium(IV) dioxide dihydrate in fluoro acetic medium for the non phenolic oxidative coupling of diarylbutanes, 1153

Sakurai reaction
intramolecular silyl-modified Sakurai reaction for construction of the right hand portion of the antifungal antibiotic ambruticine, 7141

Samarium and compds
samarium(II) iodide-mediated ring closures of substituted *N*-allyl derivs or *N*-propargyl substrates from L-serine, synth of 2,3,4-trisubstituted pyrrolidine derivs, 9411, 9425

Sapogenins
11α-hydroperoxy diacetyl hederagenin, triterpenoid deriv from *Serjania triquetra* (Sapindaceae), isolation and relay synth, 3869

Schiff bases
see Imines

Selenium and compds
ω-alkenyl benzylselenides, reaction with alkyllithiums or electrophilic cyclisation, synth of arylcycloalkanes, 7177
2'-deoxy-2'-phenylselenenyl-pyranosyl nucleosides from glycals and conversion into 2'-deoxynucleosides, 12219
electrophilic phenylselenylation of thiophenes, synth of poly(phenylseleno)thiophenes, 10549
evidence for a common selenolate intermediate in the glutathione peroxidase-like catalysis of α-(phenylselenyl)ketones and diphenyl diselenide, 2929
isoselenocyanates, synth from the corresponding formamide, synth and reactivity of *O*-alkylselenocarbamates, 639
selenium catalyst for synth of *S*-alkyl thiocarbamates from amines, carbon monoxide, elemental sulfur and alkyl halides, 5669

Selenium heterocycles
monosulfur and monoselenium analogues of psoralens (derivs of furo-[3,2-*g*]-[1]benzopyran-7-one), synth as DNA photoinactivating agents, 9315

Selones *see* Selenoaldehydes

Shikimic acid and analogues
cyathiformines A-C, fungal metabolites derived from chorismic acid, synth, 2715

Siderophores
analogues of parabactin A and agrobactin A, synth to chelate iron and to promote the growth of iron-starved *Paracoccus denitrificans*, 11781
3-*epi*-hydroxymugineic acid, distichonic acid A and 2'-hydroxynicotianamine, phytosiderophores, total synth, 265
phyto– 2'-deoxymugineic acid and nicotianamine, total synth from a β-tyrosine deriv, 9457
pseudobactin chromophore, siderophore produced by *Pseudomonas fluorescens*, biosynthesis from tyrosine, 9865
tripodal ligands possessing six convergent hydroxyl groups, a novel family of iron seqestering agents based on *o,o'*-dihydroxybiphenyl subunits, 2077

Silicon and compds
allyl silanes, intramolecular reactions of - with oxonium ions generated from α-alkoxy sulfones; towards the synth of C_{37}-C_{42} fragment of rapamycin, 835
aryl(halo)silanes, cross-coupling reactions with aryl halides, synth of functionalised biaryls, 8301
benzotriazolylmethylaminosilanes as azomethine ylid equivalents, cycloadditions with dipolarophiles to give pyrrolidines or 2,5-dihydropyrroles, 12571
catalytic intramolecular hydrosilation of silyl ethers derived from allylic alcohols, 4335
β-hydroxy ketones by palladium catalysed asymmetric 1,4-disilylation of αβ-unsaturated ketones, 335
β-silicon effect as a control element for the regioselective ring opening of oxetanes, 12319
silyl enol ethers and allylic silanes, desilylative cross-coupling to γ,δ-unsaturated ketones *via* oxovanadium-induced chemoselective one-electron oxidation, 10207
silyl ethers; utilization of neutral alumina as a mild reagent for the selective cleavage of primary and secondary silyl ethers, 8539
silyl ketene acetals, aldolisation reactions with lactone carbonyls mediated by fluoride, 3333
silylstyrenes, proton addition to–, overcoming the predilection for protiodesilylation, 11379
α-trialkylsiloxy aldehydes and their derivs by reduction of α-trialkylsiloxy nitriles with diisobutylaluminium hydride (DIBAH), 2821
Silver and compds
Heck reaction of alkenyl iodides in the presence of silver salts, catalytic asymmetric synth of decalin and functionalised indolizidine derivs, 371
Solvents and solvent effects
on addition of primary alkyl Grignard reagents to carbocyclic and heterocyclic arylketones in the presence of magnesium TADDOLate, 6117
on asymmetric Michael reaction of chiral lithioenamines derived from α-alkyl β-keto esters, 13081
baker's yeast mediated synth of (*R*) *S*-benzyl thioglycerate from D-mannose, D-glucose and D-fructose in deuterated water, 857
biocatalysis in organic solvents, 8253
condensation of active methylene compds with arylaldehydes in water, synth of flavonols, 11499
effect on oxidation of substituted 2-thiouracils and pyrimidine-2-thione with ozone and 3,3-dimethyl-1,2-dioxirane, 3259
effects on the ene reactions of diethylazodicarboxylate and triazolidinone, 1821
effects on lipase-catalysed transesterifications of *cis*- and *trans*-4-methylcyclohexanols, 4681
effects in oxaspirocyclisation, 559
on glycosylation using glycosyl phosphite as a glycosyl donor, 6523
4-hydroxycyclopent-2-en-1-one and derivs as chiral synthetic equivalents of cyclopentadienone in Diels-Alder reactions in water, 8515
in Michael reactions involving titanium enolates and "ate" complexes of *N,N*-disubstituted amides and thioamides, 7193
organic solid state reactivity, 6441
palladium-mediated deprotective method of allyloxycarbonyl in aqueous media, 497
on photochemistry of *N*-phthaloyl derivs of hydroxy substituted amino acids, 701
photoredox reactions of polypyridyl chromium(III) complexes with arylthioacetic acids in acetonitrile and aqueous media, 9447
substitution of allylic substrates in an aqueous-organic medium using a palladium(0)-water soluble phosphine catalyst, 505
in transformation of hydrocarbons into ketones/alcohols and alkenes, application of t-butyl hydroperoxide and dioxygen using soluble Fe(III) and Cu(II) chelates, 2665
Solvolysis
of bis(2,6-dimethyl-4-methoxyphenyl)-organylboranes, 13801
of polyenol ethers, dependence on the nature of the alkoxy moiety, 13207

Sonochemistry
ultrasound effects on the Mn(III)-promoted addition of amidoalkyl radicals to olefins, 13847
ultrasound-assisted Diels-Alder reactions of 1-dimethylamino-1-azadienes and electron-defficient dienophiles, 10047
Spiro compds
dispiro[3.1.3.2]-, dispiro[3.0.3.3]-, dispiro-[3.0.4.2]-, dispiro[2.0.3.4]- and dispiro-[2.1.3.3]undecanes, synth and rearrangement to [3.3.3]propellanes, 10867, 10879
dispiroketals (1,18,13,16-tetraoxadispiro-[5.0.5.4]-hexadecan-14-ones) from reaction of α-hydroxy acids with bis-dihydropyrans, subsequent reaction of the enolates with electrophiles, 7157
3,4-epoxy-1,6-dioxaspiro[4,5]dec-7-enes by [4+2]-cycloadditions of 3,4-epoxy-2-methyleneoxolanes with oxadienes, 8035
free radical approach to spirocyclic systems; development of a 1,5-allylic abstraction-cyclisation sequence, 13523
oxaspirocyclisations, oxidation of 1-(3-hydroxyalkyl) and 1-(4-hydroxyalkyl)-1,3-cycloalkadienes and total synth of theaspirone, 559
spiro anomeric oxathiazole derivs by treatment of 2,3,4,6-tetra-*O*-acetyl-1-*S*-(*Z*)-benzhydroximoyl-1-thio-D-glucopyranose with *N*-bromosuccinimide, 6559
5,5-, 5,6- and 5,7-spiroindolines by palladium-catalysed Heck-type cyclisation reactions, 359
spiropyrazolines from tandem reactions of one mole of azide and three molecules of alkyl vinyl ketone, 12133
Stereochemistry
of the 1,3-cycloaddition of *C*-methyl-*N*-phenylnitrone to substituted styrenes, 6671
absolute - at C1 and C2 of *cis*-(+)-2-hydroxy-2-phenylcyclohexanecarboxylic acid (cicloxilic acid), 205
absolute – of cyclolinteinone, sesterterpene from *Cacospongia* cf. *linteiformis*, 13469
absolute – of furanosesquiterpenes from *Dysidea herbacea*, 3879
absolute – of petroformynes, high molecular polyacetylenes from the marine sponge *Petrosia ficiformis*, 13261
in carbenoid formation by bromine/lithium and bromine/zinc exchange reactions of *gem*-dibromo compds, 7987
of α-chlorination of α-phosphoryl sulfoxides, 8053
counterion effect on stereochemistry of reduction of cycloalkanones by alkali metals in ammonia, 3149
of euryspongiols from the sponge *Euryspongia* sp., 3813
of favelol, isofavelol and favelone, benzocycloheptenone derivs from the bark of *Cnidoscolus phyllacanthus*, 5659
of Ferrier reaction by using (*E*)-selectively deuterated methyl[6-^{2}H]-2,3,4-tri-*O*-benzyl-α-D-*xylo*-hex-5-enopyranoside, 4125
of the hydrogen peroxide-acetic acid oxidation of ursolic acid and related compds, 11459
isomeric dideoxynucleosides with *S,S* absolute stereochemistry as potential antiviral agents, synth, 7747
in the Peterson reaction, synth of BRL 49467, 6643
of radical cyclisation of *gem*-chlorofluoroheptenols, synth of monofluorocyclohexanols, 12361
of the reaction of lithio derivs of two sets of isomeric 3-thia[3.2.1]octane-3-oxides with electrophiles, 6061
and regiochemistry of addition reaction of of *N*-benzylhydrazine to sugar δ-enlactones, 7219
and relative rates of fluoroalkylation of 1-phenylbenzocycloalkenes with cesium fluoroxysulfate, 12235
stereochemical consequences of the Lewis acid-promoted 3-aza-Cope rearrangement of *N*-alkyl-*N*-allyl enamines, 4105
stereochemical control in the ene reactions of α,ε-unsaturated aldehydes using bulky organoaluminium reagents, elucidation of the transition state, 6505
stereoselective aldol reactions qf enolates derived from 1,3-diacyl-imidazolidine-2-thiones and 1,3-diacylimidazolidin-2-ones, 6621
stereospecific generation of natural C-17 stereochemistry and C-20 epimer in steroid side-chains by hydrogenolysis of C-17 and C-20 allylic carbonates, 475

structural requirements and steric course at the lithium bearing terminus in [1,2]-Wittig rearrangement of enantio-defined α-alkoxyalkyllithiums, 5927
and synth of medium-ring nitrogen-containing alcohols and related compds, 13199
of yeast reductions of fluorinated β-diketones, synth of corresponding ketols, 11995
Stereocontrol
enantioselective route to (−)-$\Delta^{9(12)}$-capnellene from (−)-2-methyl-4-trimethylsilyl-2-cyclopenten-1-one, 655
in radical cyclisations on sugar templates, 5369
Stereoisomerism
in *N*-cyano-*O*-phenylisoureas and related compds, 12211
Stereoselection
1,4-addition reaction of organocopper reagents to ethyl 3-[(*S*)-2,2-dimethyl-1,3-dioxolan-4-yl]propenoate, 13173
in alkylation of menthyl hippurate and some related materials, 1967, 1975
Diels-Alder reactions of α-substituted acrylates and α-(methylene)lactones to study correlation of conformation of dienophiles and *endo/exo* selectivity, 10839
effect of zinc halides on stereoselectivity of a Mannich type cyclisation in the tilivalline synth, computational chemical analysis, 9775
influence of the imine structure on the *trans/cis* stereoselectivity of β-lactams formed by condensation of titanium enolates of 2-pyridylthioesters with imines, 2939
origins of stereoselectivity in allyl- and crotylboronate addition to aldehydes, development and application of a force field model of the transition state, 8815
regio- and stereoselection in 1,3-dipolar cycloaddition reactions of ethyl diazoacetate to 3-substituted 2*H*-1-benzopyran-2-ones, 13023
stereoselective reactions of α-imide substituted radicals generated from the corresponding Barton esters, 7029
synth and activity of conformationally restricted hybrids of CP-55,940 and (−)-9-nor-9β-hydroxyhexahydrocannabinol (HHC), 2671
in Wittig rearrangement of lithioalkyl allyl ethers; exhibition of different *cis, trans*-selectivities than [2,3] shifts in their lithiomethyl analogues, 13417
see also Diastereoselection
Steric and strain effects
in enantioselective catalytic epoxidation of cinnamate esters, 4323
in rearrangements of (9-alkyl-9-fluorenyl)-methyllithium (or cesium) and 2,2-diphenyl-3,3-dimethyl-butyllithium, 5971
effect of ring strain on zinc reductions of 1,2-dibenzocycloalkanes, 2949
Steroids and sterols
14β-allylestrone and the derived 14α,17α-ethano analogue of estriol by cycloaddition of 3-methoxyestra-1,3,5(10),14,16-pentaen-17-yl acetate with acrolein, 6363
13-ethyl-11-methylene-18,19-dinor-17α-pregn-4-en-20-yn-17-ol (desogestrel), steroid hormone, and its metabolite 3-oxo desogestrel, synth from the 18a-homo steroid, 10709
16-functionalised 14α,17α-etheno-19-nor-steroids, synth by cycloaddition of phenyl vinyl sulfone to 3-methoxyestra-1,3,5(10),14,16-pentaen-17-yl acetate, 6347
triaromatic steroid hydrocarbons methylated at position 2, 3 or 6, synth from pregnenolone, cholesterol or stigmasterol *via* stera-3,5-dienes, molecular fossils of unknown biological origin, 1731
3-carboxyalkyl-steranes from geological samples, characterisation of, 12633
euryspongiols, ten new hydroxylated 9,11-secosteroids with antihistaminic activity from the sponge *Euryspongia* sp., stereochemistry and reduction, 3813
(22*R*,23*R*,24*S*)-3β-hydroxy-5-ene-22,23-dihydroxy-24-methyl-cholestane, a brassinolide intermediate from 16-dehydropregnenolone acetate, 2523
20-hydroxyecdysone glycosides, synth involving the combination of hydroxyl and 1,2-diol protective groups in the aglycone moiety, 9679
introduction of side-chains corresponding to phenylalanine, tyrosine and trypto-

phan onto a steroid template *via* condensation of the appropriate lithium acetylide with a steroidal ketone, 4225
nitrogenous brassinosteroid analogues, synth from *Solanum* steroid alkaloid solanidine, 10923
phosphodiester of 3β(7β-hydroxycholesterol), antiviral activity, synth by phosphorylation, 1173
phosphoric acid diesters of 7β-hydroxycholesterol and carbohydrates, synth by phosphoramidite method, 6569
phytoecdysteroids from *Polypodium vulgare*, isolation and structure, 7247
polyhydroxylated steroids, regioselective esterification by *Candida antarctica* lipase B, 13165
polyoxygenated steroids by reaction of 7,9(11)-diene steroids with ruthenium tetroxide, 4835
5-(prop-2-enyl)-2ξ-hydroxy-5α-cholestan-3-one, ene reaction of, 13461
squalene synthase in biosynthesis of cholesterol, farnesyl chain modification of squalene synthase inhibitor benzylfarnesylamine, conversion to the terminal bis(trifluoromethyl)deriv, 3849
stereospecific generation of natural C-17 stereochemistry and C-20 epimer in steroid side-chains by hydrogenolysis of C-17 and C-20 allylic carbonates, 475
steroid and terpene intermediates having *cis* A-B ring fusions, synth by intramolecular Heck reactions, model studies for the total synth of complex cardenolides, 347
19-substituted androstenedione analogues by [3,3] and [2,3] rearrangements of 11-substituted estradienedione derivs, 8491
topsentiasterol sulfates A-E, antimicrobial sterol sulfates from marine sponge *Topsentia* sp., structures, 7765
unsaturated steroids, oxidation of - using mercuric oxide/iodine, 1833
withajardins A, B, C and D, steroid lactones from leaves of *Deprea orinocensis*, structure and absolute configuration, 1217

Strain effects *see* Steric and strain effects

Structure activity
see Linear free energy relations

Substituent effects
– and aggregation on aromatic lithiation, 5903
1-alkyl-3-phenylpiperidine derivs containing 2,5-functionalised groups, synth, 10477
4-t-butylphenyl solubilised oligopyridines, synth, 7799
cycloaddition of 4-oxo-4*H*-1-benzopyrans with substituents at C-3 to 1-alkoxy- or 1,1-dialkoxyalkenes, synth of 3-alkoxy- or 3,3-dialkoxy-4,4a-dihydropyrano[4,3-*b*][1]benzopyran-10-ones, 11755
in Diels-Alder reaction of 2,5-dialkylfurans and fumaronitrile, 12125
in the Diels-Alder reactions of a series of 2-sulfone substituted 1-furyl-4-penten-1-ols, synthetic and kinetic studies, 6767
on 1,3-dipolar cycloadditions to some 1,1-diphenyl-2-aza-1,3-butadiene derivs, 3773
effect of *para*-substituent on Mitsunobu reaction of *p*-oxygenated benzylic alcohols, synthetic routes to flavan-3-ols, 5469
effects of α-substituents on the resonance demand of 4-methoxybenzyl carbocations, 7981
electronic control of enantioselectivity in the palladium-catalysed asymmetric allylic substitution of *trans* 4-t-butyl-1-vinylcyclohexyl benzoates, 465
on features of two mechanisms (elimination and internal return) in ester pyrolysis, AM1 calculations, 161
on the formation of β-lactams from bicyclic cyano-substituted isoxazolidines, 3943
on formation of model compds of azadirachtin by oxidative ring contraction reaction, 11553
on glycosylation using glycosyl phosphite as a glycosyl donor, 6523
influence on the mechanism of oxidation of amino acids by peroxomonosulfate, 9495
influence of the position and characteristics of biphenyl substituents on association constants of alkaline complexes of macrolactones and crown ethers, 5381
methoxy group effect on geometry of the benzene ring; molecular structure of 4-(4-methoxyphenyl)-2,6-diphenylpyridine

and 1-methyl-4-(4-methoxyphenyl)-2,6-diphenylpyridinium perchlorate, 13155
2-methylpyridazin-3(2*H*)-ones bearing ethylsulfonyl, cyano and methoxycarbonyl groups at the 4- or 5-position, Diels-Alder reactions of, 5169
on regioselection of alkylations of 2-substituted-4-methylbenzimidazoles, 5535
relative rates of hydrogen-abstraction from eleven-substituted iso-propylbenzenes by bromine atoms, 7503
remote asymmetric induction using neighbouring group participation of a sulfenyl group, 8317
retention of configuration in the Ritter-type substitution reaction of chiral β-arylthio alcohols through the anchimeric assistance of the arylthio group, 8997
rhodium carbenoid mediated O-H insertion reaction of phenols with trialkyl 2-diazophosphonoacetates, synth of trialkyl 2-aryloxyphosphonoacetates, 3177
stereochemical consequences of the Lewis acid-promoted 3-aza-Cope rearrangement of *N*-alkyl-*N*-allyl enamines, 4105
substituent field effects on regiochemistry of reaction of 4-methyl-1,2,4-triazolinedione with allylic ethers and sulfides, 8569

Substitution
of allylic phosphates with Grignard reagents using a transition metal catalyst, 6017
of allylic substrates in an aqueous-organic medium using a palladium(0)-water soluble phosphine catalyst, 505
asymmetric allylic - of *trans* 4-t-butyl-1-vinylcyclohexyl benzoates, electronic control of enantioselectivity, 465
of bicyclic tetronic, tetramic and thiotetronic esters, 8237
of 4,6-dimethoxy-2,3-diphenylindole at C-7, 10497
electron transfer induced aromatic nucleophilic substitution, mechanisms and reactivity, 10117
electrophilic – of enantioenriched α-oxy-α-methylbenzyllithium, stereodivergence in, 6097
electrophilic – on some ferrocenyl-heteroarenes, 5765
electrophilic phenylselenylation of thiophenes, synth of poly(phenylseleno)thiophenes, 10549
ionic - reactions in $GoAgg^{IV}$ chemistry, formation of C-Hal, C-N, C-S and C-C bonds, 31, 47
metalation and electrophilic - of *N*-(2-hydroxymethylphenyl)pyrrole, ring construction of pyrrolobenzoxazepine, 2071
nucleophilic aromatic photo- reactions of nitroaryl ethers, kinetic studies of the quenching of - by bromide ions in cationic micellar solution, 3071
oxidative versus vicarious nucleophilic substitution of hydrogen in the reaction of dithiane derivs with nitroarenes, 4913
palladium-catalysed – of (*E*) and (*Z*)-dichloroethenes with 1-alkynes, synth of (*E*) and (*Z*)-enediynes, 5335
palladium-catalysed allylic - with allylic alkoxides as substrates, 529
reactions of ninhydrin with 3,5-dimethoxyaniline, synth of indole derivs, 10983
Ritter-type substitution reaction of chiral β-arylthio alcohols, retention of configuration through the anchimeric assistance of the arylthio group, 8997
S_H2' reaction of cyclopentenylmethyl-, cyclohexenylmethyl- and α-pinenyl cobaloximes, synth of *exo*-methylene cycloalkylsulfones, 1847
S_Nb reaction of the nucleophile at the C4 carbon of the *N*-tosyloxy β-lactam; bicyclic β-lactams by intramolecular nucleophile transfer reactions of *N*-tosyloxy β-lactams, 8275
S_NAr-reaction between sodium benzenesulfinate and *p*-halonitrobenzenes, electrochemical investigation, 7889
$S_{RN}1$ reactions of 7-iodobicyclo[4.1.0]-heptane with carbanions; stereoselective C-C bond formation on cyclopropane rings, 9267
tandem Michael-S_N2 reaction for the construction of the 3-azabicyclo[3.1.0]-hexane ring system, 9943

Sufonyl compds
2-alkyl-2-oxazoline-4-carboxyamido-*N*-sulfonyl derivs by reaction of 2-alkyl-2-oxazoline-4-carboxyamides with aryl- and alkyl sulfonyl chlorides, 5083

Sulfamic acid and derivs
5-*O*-sulfamoyl nucleosides from 5-*O*-

sulfamoyl-1,2,3-tri-*O*-acetyl-β-D-ribofuranose using a modification of the Vorbrüggen-Hilbert-Johnson reaction conditions, 6825

Sulfanes
bis(2,3-dimethylbutenyl)sulfanes by sulfane addition to 2,3-dimethyl-1,3-butadiene and of the reaction of sulfur with 2,3-dimethyl-2-butene, 11187

Sulfenic acids and derivs
α-chloro-α-chlorosulfenyl ketones, conversion to 3,3-dichloro- and 3-chlorochroman-4-ones and thiochroman-4-ones, 5245
α-monosulfenylated ketones by treatment of α,α-dibromomethyl ketones with sodium thiolates, 12349
4'-nitrobenzenesulfenanilide, reaction with Lewis acids and application to sulfenocyclisation of alkenes and alkynes, 12395
remote asymmetric induction using neighbouring group participation of a sulfenyl group, 8317
sulfenamides derived from thiochroman-4-ones, ring contraction of, synth of benzo[*b*]thiophen-3-ones, 827
sulfenamides from reaction between amides and *N*-(benzenesulfenyl)-phthalimide or benzenesulfenyl chloride, precursors to aminyl radicals, 1275, 1295
2-sulfenylated aldehydes, enantioselective synth by alkylation of sulfenylated acetaldehyde SAMP-hydrazones, 3349
p-tolylsulfenyl, *p*-tolylsulfinyl and *p*-tolylsulfonyl naphthazarins (5,8-dihydroxy-1,4-naphthoquinone), synth, 5013

Sulfides
ab initio MCSCF study of the homolytic S-S bond dissociation in di–, thiosulfinates and α-disulfoxides, 12469
allylic aryl sulfides by palladium(0)-catalysed alkylation of allylic carbonates by aromatic thiols, 10321
allylic sulfides bearing two different leaving groups, reaction with organocopper reagents by selective substitution of the heterocyclic moiety, synth of homoallylic alcohols, 7283
allylic sulfides and ethers, ene reactions of –, comparison of substituent field effects on the regiochemistry, 8569
arylazosulfides containing electron withdrawing groups, photochemical decomposition in the presence of the anion of dimethyl malonate, synth of 2-arylmalonate derivs and transformation into respective profens, 8117
bishomoallyl phenyl sulfides, reductive lithiation with 4,4'-di-t-butylbiphenylide (LDBB), synth of bishomoallyllithiums, 12793
t-butyl *p*-tolylazo sulfide for electrophilic α-*p*-tolylhydrazonylation of ketone enolates, synth of 2-oxohydrazones, 11239
catalytic asymmetric oxidation of – using (salen)manganese(III) complexes as catalysts, 9609
dialkyl disulfides from hydrocarbons by utilization of the $GoAgg^{IV}$ system in the presence of sodium disulfides, 47
β-hydroxy sulfone and β-hydroxy sulfide by ring opening of oxiranes by sodium *p*-toluene sulfinate in the presence of polyethylene glycol (PEG) 4000, 10483
metalation of allyl – leading to α-thiallyl metallic compds, reaction with electrophiles to give the α-substituted allyl sulfides or the γ-substituted vinyl sulfides, 6029
2,4-bis(4-methoxyphenyl)-1,3,2,4-dithiadiphosphetane-2,4-disulfide (Lawesson's reagent), reaction with aromatic dihydroxycompds, synth of 1,3,2-dioxaphospholane-2-sulfide, 6975
oxidation of – by hydrogen peroxide under methyltrioxorhenium(VII) catalysis, 13121
see also Thioethers, Thiols

Sulfines *see* Thiocarbonyl oxides

Sulfinic acids and derivs
N-methane- or *p*-toluene-sulfonyl α-aminosulfinic acid salts by coupling of α-hydroxysulfinates with methane- or *p*-toluene-sulfonamides, 5401

Sulfinyl compds
chiral 2-*p*-tolylsulfinylcycloalkanones, stereoselective reduction with DIBAL and DIBAL/$ZnCl_2$, 9355
α-halo-α-sulfinyl carboxylic acid, esters and aldehydes, ligand exchange reaction of the sulfinyl group to give magnesium enolates and conversion to α-halocarboxylic acid derivs, 4957

α-sulfinyl carbanion of *p*-tolyl 2-(trialkylsilyl)ethyl sulfoxides or t-butyl 2-(trimethylsilyl)ethyl sulfoxide, reaction with aldehydes and subsequent desilylsulfinylation to yield allylic alcohols, 1045
α-sulfinyl cycloalkanones, diastereoselective hydrocyanation of –, 7567
p-tolylsulfinyl, *p*-tolylsulfenyl and *p*-tolylsulfonyl naphthazarins (5,8-dihydroxy-1,4-naphthoquinone), synth, 5013

Sulfolenes
quinoxalino-3-sulfolene, synth and transformation into quinoxalino-*o*-quinodimethane, 10721

Sulfonamides
2-formyl benzenesulfonamides by reaction of amines with pseudo 2-formylbenzenesulfonyl chlorides, experimental and theoretical studies on the structure of–, 5425
methane- or *p*-toluene-sulfonamides, coupling reaction with α-hydroxysulfinates, synth of *N*-methane- or *p*-toluenesulfonyl α-aminosulfinic acid salts, 5401

Sulfones
carbanions of dithiane monosulfone and dithiane monosulfonium salt, reaction with nitroarenes by oxidative or vicarious nucleophilic substitution of hydrogen, 4913
dilithiated 2-(chloromethyl)-3-tosylpropene, synth as a new γ-chlorinated allyl sulfone dianion for organic synth, 3491
divinyl sulfones, reaction with sugar aldoximes, synth of heterocyclic systems *via* nitrone intermediates, 5495
exo-methylene cycloalkylsulfones by reactions of cyclopentenylmethyl-, cyclohexenylmethyl- and α-pinenyl cobaloximes with arenesulfonyl halides, 1847
from cyclisation of dienes and enynes using $TolSO_2SePh$, 13533
from dimethyldioxirane oxidation of (*Z*)-1-thioaurones, (*E*)-3-arylidene-1-thiochroman-4-ones and (*E*)-3-arylidene-1-thioflavan-4-ones, 13113
β-hydroxy sulfone and β-hydroxy sulfide by ring opening of oxiranes by sodium *p*-toluene sulfinate in the presence of polyethylene glycol (PEG) 4000, 10483
γ-hydroxy sulfones of polypropionate structure from homologation of enantiomerically pure γ-hydroxy vinyl sulfone, 7557
oxazole-4-sulfones, -phosphonates and -nitriles by rhodium(II) catalysed addition of nitriles to the corresponding diazo compd, effect of ligand on rhodium, 3761
oxonium ions generated from α-alkoxysulfones, trapping of - by allyl silanes; towards the synth of C_{37}-C_{42} fragment of rapamycin, 835
2-sulfone substituted 1-furyl-4-penten-1-ols, synthetic and kinetic studies of substituent effects in Diels-Alder reactions of, 6767
tosylated lithium 2-(lithiomethyl)-2-propen-1-olate, a γ-alkoxide allyl sulfone anion for regioselective alkylation at the α-position with alkyl halides, aldehydes and αβ-unsaturated carbonyl compds, 6603
α,β-unsaturated sulfones with a trifluoroacyl group by perfluoroacylation of alkynes *via* sulfonium salts and sulfides, 12407

Sulfonic acids and derivs
lanthanide(III) trifluoromethanesulfonates, synth of both enantiomers and use as catalysts in asymmetric Diels-Alder reactions, 11623
perfluorinated resinsulfonic acids (Nafion-H), transformation of 1,2-diols over –, 8195

Sulfonium salts
carbanions of dithiane monosulfone and dithiane monosulfonium salt, reaction with nitroarenes by oxidative or vicarious nucleophilic substitution of hydrogen, 4913

Sulfonyl compds
1-arenesulfonyl-4-nitroimidazoles, reactions with aniline in aqueous methanol solution, 5741
N-benzenesulfonyl-*N,O*-isopropylidene derivs of 1-(2-furyl)-2-aminobutane-1,3-diols, synth and absolute configuration, 7611
chlorosulfonylisocyanate, addition to heterocycles such as thiophene or indole, synth of *N*-chlorosulfonylamides and

subsequent conversion to nitriles, 6549
2(*S*)-[1,1-dimethylethylsulfonylmethyl)-3-(1-naphthyl)-propionic acid, synth from 3-bromo-pyruvic acid, building block for protease inhibitors, 4691
ethyl *N*-[[(4-methylphenyl)sulfonyl]oxy]-carbamate in amination reactions using Cs_2CO_3 or CaO promoters, 11235
ethyl *N*-[(4-nitrophenyl)sulfonyl]oxycarbamate, improved amination by – in the presence of inorganic oxides or carbonates, 3829
2-[(4-fluorophenylsulfonyl)methyl]carbapenem carboxylate, synth involving addition-elimination ring closure of an iodovinyl sulfone as the key step, 12085
organothio sulfonyl carbenes, *in situ* prep *via* ylid decomposition or *via* α-eliminations, 3721
3-phenyl-2-(*p*-toluenesulfonyl)-1,2-dihydro-4(3*H*)-isoquinolinone, synth and transformation to 5-(*p*-toluenesulfonyl)-5,6,13,14-tetrahydro-12(11*H*)-benzo[*c*]-phenanthridinones, 10971
pseudo 2-formylbenzenesulfonyl chlorides, reaction with amines, experimental and theoretical studies on the structure of 2-formyl benzenesulfonamides, 5425
p-tolylsulfonyl, *p*-tolylsulfenyl and *p*-tolylsulfinyl naphthazarins (5,8-dihydroxy-1,4-naphthoquinone), synth, 5013
N-(trifluoromethylsulfonyl)arenesulfonimidoyl- and *N,N'*-bis(trifluoromethylsulfonyl)arenesulfonodiimidoyl chlorides, reactions with ammonia, 6891

Sulfoxides
ab initio MCSCF study of the homolytic S-S bond dissociation in di–, thiosulfinates and α-disulfides, 12469
β-amino sulfoxide by diastereoselective reduction of the β-sulfinyl enamine with sodium borohydride, rearrangement of – to alcohol, 13501
by oxidation of sulfides by hydrogen peroxide under methyltrioxorhenium(VII) catalysis, 13121
α-chloro β-hydroxy sulfoxide, ligand exchange reaction of sulfinyl group of–, synth of β-oxido carbenoid, 11839
α,β-epoxysulfoxides, ring-opening of – in synth of α-thiosubstituted carbonyl compds, deoxygenation *versus* dehydration and an overall 1,2-keto transposition, 5413
fluorinated sulfoxide chiron route to monofluorocyclohexanols *via gem*-chlorofluoroheptenols, 12361
from catalytic asymmetric oxidation of sulfides using (salen)manganese(III) complexes as catalysts, 9609
from dimethyldioxirane oxidation of (*Z*)-1-thioaurones, (*E*)-3-arylidene-1-thiochroman-4-ones and (*E*)-3-arylidene-1-thioflavan-4-ones, 13113
ligand exchange reactions of sulfoxides, synth of α-halocarboxylic acid derivs and α-haloaldehydes from α-halo-α-sulfinyl carboxylic acid, esters and aldehydes *via* magnesium enolates, 4957
lithio derivs of two sets of isomeric 3-thia-[3.2.1]octane-3-oxides, stereochemistry of the reaction with electrophiles, 6061
α-phosphoryl sulfoxides, α-chlorination with iodobenzene dichloride and sulfuryl chloride, stereochemistry, 8053
α-sulfinyl carbanion of *p*-tolyl 2-(trialkylsilyl)ethyl sulfoxides or t-butyl 2-(trimethylsilyl)ethyl sulfoxide, reaction with aldehydes and subsequent desilylsulfinylation to yield allylic alcohols, 1045

Sulfoximines
β-hydroxysulfoximine-catalysed enantioselective alkylation of aldehydes, 4355

Sulfur compds
ab initio MCSCF study of the homolytic S-S bond dissociation in disulfides, thiosulfinates and α-disulfoxides, 12469
S-alkyl thiocarbamates from amines, carbon monoxide, elemental sulfur and alkyl halides in the presence of a selenium catalyst, 5669
alkyl(alkythio)benzenes, metalation with butyllithium or with the superbase mixture of butyllithium with potassium t-butoxide, 6037
(*R*) *S*-benzyl thioglycerate from fermentation of D-mannose, D-glucose and D-fructose, 857
bis(2,3-dimethylbutenyl)sulfanes by sulfane addition to 2,3-dimethyl-1,3-butadiene and of the reaction of sulfur with 2,3-dimethyl-2-butene, 11187
methylthiomethyl, *o*-thioanisyl and thienyl oxazolines, synth as ligands for asym-

metric catalysis, 799
4'-thia analogues of α-santalene and α-santalol by using allyl type organometallic intermediates, 6029
Sulfur heterocycles
bicyclic compds by intramolecular cycloaddition of chiral thiaalkenyl nitrones, 3929, 3943
bicyclic thiotetronic esters, Michael and substitution reactions of, 8237
cyclic sulfate ester of dimethyl L-tartrate and 2-thioxo-1,3-dithiole-4,5-dithiolate; short intermolecular S...S contacts in the reaction product, 11205
monosulfur and monoselenium analogues of psoralens (derivs of furo[3,2-*g*][1]-benzopyran-7-one), synth as DNA photoinactivating agents, 9315
sulfur containing bis-heteroaromatic or bis-heterocyclic derivs by coupling of corresponding halogenated compds in the presence of liganded nickel complex reducing agents, 11893
thieno[3,4-*d*]borepin and thieno[2,3-*d*]-borepin, conjugation characteristics, 6495
(*Z*)-1-thioaurones, (*E*)-3-arylidene-1-thiochroman-4-ones and (*E*)-3-arylidene-1-thioflavan-4-ones, dimethyldioxirane oxidation of, synth of sulfoxides and/or sulfones, 13113
thiochroman-3,4-diones, synth and reactivity of, 7865
see also the individual ring systems
Sulfuric acid and derivs
dialkyl sulfates, lithiation by naphthalene catalysed lithiation, synth of alkyllithium reagents, 3427
Sultams
N-acetoacetyl sultam, 1,4-conjugate addition to arylidenemalononitriles, synth of highly functionalised 2-amino-4-aryl-4*H*-pyrans, 3509
Supported reagents/reactions
gel-phase peptide synth on a high-capacity tetraethyleneglycol diacrylate-cross-linked polystyrene support, synth of pardaxin 16-33, 6681
heterogeneous catalytic asymmetric dihydroxylation of olefins; a new polymeric support and a process improvement, 11321
ion-exchange resin support for synth of 1-aryl-3,3-disubstituted triazines, 9107
non-nucleosidic solid supports for prep of oligonucleotides bearing a carboxy-, amino-, carboxamido- or mercaptoalkyl spacer arm at the 3'-terminus, 7203
silica gel supported zinc borohydride for hydration of unactivated alkenes and alkynes, 6579
utilization of neutral alumina as a mild reagent for the selective cleavage of primary and secondary silyl ethers, 8539
Surfactants
surfactant control of the *ortho/para* ratio in the bromination of *N,N*-disubstituted anilines, 3797

Tannins
flavan-3-ols and 4-arylflavan-3-ols, absolute configurations *via* the Mosher method, 12477
Tautomerism
of arylenols, synth by irradiation of α-tetrasubstituted arylketones, 2849
of 1*H*-benz[*de*]isoquinoline to benz[*de*]-isoquinolinium-1-ide, 7495
and synth of 9-azabicyclo[4.2.1]nonan-1-ols (norhomotropan-1-ols), *N*-alkyl and 7,8-dehydro- derivs and oxabicyclic analogues, 11039
Technetium and compds
^{99m}Tc complexes with 6-substituted 4,8-diaza-3,3,9,9-tetramethylundeca-2,10-dione dioximes (propylene amine oximes, PnAOs), synth for use in structure distribution relationship studies, 8617
Terpenes and terpenoids
Cichorium intybus, roots of chicory, in biotransformation of 8-methyl-*trans,trans*-cyclodeca-3,7-dien-1β-ol into 4aβ-methyl-1,2,3,4,4a,5,6,7,8,8aα-decahydronaphthalene-1,7β-diol, 3169
dispiro[3.1.3.2]-, dispiro[3.0.3.3]-, dispiro-[3.0.4.2]-, dispiro[2.0.3.4]- and dispiro-[2.1.3.3]undecanes, synth and rearrangement to [3.3.3]propellanes, 10867, 10879
3,3a,4,6a-tetrahydro-2*H*-cyclopenta[*b*]furan-2-ones, starting materials for triquinane sesquiterpenes, synth from 3-hydroxy-6-heptenoic acids *via* bicyclo[3.2.0]hept-3-en-6-ones, 7645
nor-ambreinolide from (+)-*cis*-abienol,

6653
andersobine, diterpenoid alkaloid from *Delphinium andersonii*, structure, 12283
11β-angeloyloxy-α-santonin, decipienin A eudesmanolide from *Umbelliferae*, stereostructures of eudesmanolides, 5439
(−)-antirhine, monoterpenoid indole alkaloid, enantioselective synth by chemoenzymatic approach from (1*R*-2*S*)-cyclohexene dimethanol monoacetate, 8837
(±)-aphidicolin, antiviral and antitumour tetracyclic diterpene from *Cephalosporium aphidicola*, synth, 11153
ardisicrenosides E and F, triterpenoid pentasaccharides from roots of *Ardisia crenata*, NMR and molecular mechanics to determine structure, 11853
artemisinin, peroxide sesquiterpene, synth, conformational analysis and antimalarial activity of tricyclic analogues of artemisinin, 957
with a bicycle[5.3.0]decane system, synth of 1-acetyl-3α,6-dimethyl-hexahydroazulene as intermediate for the prep of −, 12655
briarane and asbestinane diterpenes from corals of *Briareum asbestinum*, structures, 1983
(±)$\Delta^{9(12)}$capnellene, triquinane marine sesquiterpene, total synth using a Pd-catalysed bis-cyclisation step, 403
carapolides C-I and evodoulone, tetranortriterpenoids from extracts of seeds of *Carapa grandiflora* (Meliaceae), structures, 9343
cheimonophyllon A-E and cheimonophyllal, bisabolane sesquiterpenes from the Basidiomycete *Cheimonophyllum candidissium*, structures, 12649
chrysomelidial and plagiodial, defensive iridoid monoterpenes in larvae of leaf beetles *Phaedon amoraciae, Phaedon cochleariae, Gastrophysa viridula* and *Plagiodera versicolora*, biosynthesis, 6859
conjugated *cis*-caradienes from 3-carene by Wittig reaction, 13181
cyclolinteinone, sesterterpene from *Cacospongia* cf. *linteiformis*, structure and absolute stereochemistry of, 13469
ent-7α,18-diacetoxy-14β-mesyloxybeyer-15-ene, tetracyclic diterpene, rearrangements of, 10761
dianchinenosides E-H, triterpenoid saponins from *Dianthus chinensis* L., structures, 12811
(+)-1,2-dihydrotubipofuran, furanosesquiterpenoid, synth from santonin, 5527
docetaxel, partial synth of major human metabolites of docetaxel, 10289
dolabellanes, diterpenes from brown alga *Dictyota pardalis* f. *pseudohamata*, structures, 8011
dolastatine 10 and [*R*-Doe]-dolastatine 10 from marine mollusc *Dolabella auricularia*, synth, 5345
epicandicandiol diterpene, transformation to chloro-enol-lactone and subsequent Favorskii rearrangement to gibberellin A_{12} isomer, 12643
7-epizingiberene, bisabolane sesquiterpene from *Lycopersicon* wild tomato leaves, structure, 11123
eriocephalin, *neo*-clerodane diterpenoid, base-catalysed reactions of − giving *neo*-clerodane derivs with insect antifeedant activity, 13553
espintanol, leishmanicidal and trypanocidal monoterpene from the spruce *Oxandra espintana*, synth, 8673
6β-eudesmanolides and 6b-guaianolides from 6α-eudesmanolides, synth of analogues of artepaulin, colartin and tannunolide D, 2917
(±)-euryfuran, alternative synthetic approaches to − *via* the furan ring transfer reaction, 5645
2-fluorogeraniol and 2-fluorofarnesol using a fluoroisoprenylation sequence employing 2-fluoroalkenal derived azomethines as key intermediates, 7827
forskolin, studies on forskolin ring C forming reactions *via* 1,9-dideoxy forskolin, 139, corrig. 4037
from epoxy-pyronene derived from δ-pyronene, 3381
from verongida sponges, *Pseudoceratina crassa*, chemical characterization, 783
furanosesquiterpenes from *Dysidea herbacea*, configurational analysis, absolute stereochemistry, 3879
Gelsemium terpenoid alkaloid, 11-methoxy-19(*R*)-hydroxygelselegine, from sarpagine-type indole alkaloid

gardnerine, 11813
(+)-hedycaryol, germacrane sesquiterpene, and (+)-γ-eudesmol, synth from (−)-guaiol, 4755
helioxenicins A-C, diterpenes from the blue coral *Heliopora coerulea*, structures, 9989
(±)-α-himachalene, sesquiterpene from essential oil of Himalayan cedar *Cedrus deodara Loud*, total synth involving [2+2] photoaddition and regioselective β-scission of alkoxy radicals, 7771
(±)-hirsutene, tricyclic terpenoid, synth by a catalytic allylpalladium-alkyne cyclisation/carbonylation cascade, 415
hopane and migrated hopane derivs, assignment of carbon-13 chemical shifts by 2D NMR, 2865
11α-hydroperoxy diacetyl hederagenin, triterpenoid deriv from *Serjania triquetra* (Sapindaceae), isolation and relay synth, 3869
α-hydroxy-β-amino ester units by asymmetric reaction of chiral imines with α-silyloxy ketene acetals, stereoselective synth of taxol side chain and norstatine, 2785
12-hydroxyambliofuran, 12-acetoxyambliofuran, five tetracyclic furanoditerpenes and a furanosesterterpene from Western Australian sponge *Spongia* sp., structures, 9893
7-β-hydroxyeudesmanolides, synth and antifungal activity against *Botrytis cinerea*, 10531
ipsenol, aggregation pheromones of the bark beetle *Ips paraconfusus*, synth from 2-(chloromethyl)-3-tosylpropene, 5829
kalihinol and kalihinene diterpenes from the sponge *Acanthella cavernosa*, structure, 11079
(±)-karahana ether and karahanaenone, fragrant monoterpenes from Japanese hop *Shinshu-wase*, synth by selective cyclisation of 6,7-epoxygeranyl acetate, 13239
lactarane sesquiterpenes furoscrobiculin D and blennin D, conformational studies and stereochemical assignments, 1211
limonene as the hydrogen source in selective reduction of αβ-unsaturated ketones, 973
lintenolides, pentacyclic bioactive sesquiterpenes from the Caribbean sponge *Cacospongia* cf. *linteiformis*, structure, 849
(+)-maaliol, humulenedione and (−)-cubenol by rearrangement of aromadendrane derivs, 4733, 4745
malabarolide B_1 and menispermacide, furanoid diterpenes from stems of *Tinospora malabarica*, structure, 12109
manoalide, sesquiterpenoid phospholipase A_2 inhibitor from Pacific sponge *Luffariella variablis*, synth *via* heteroatom-assisted alkyne carbometalation, 8793
millecrone A and B, millecrol A and B, four sesquiterpenes from the South African nudibranch *Leminda millecra*, isolation and structure, 3065
nakijiquinones A and B, antifungal sesquiterpenoid quinones with an amino acid residue, isolation from Okinawan sponge *Spongiidae*, structures, 8347
neo-clerodane diterpenic acids from *Cistus populifolius*, precursors to new antifeedant agents, absolute stereochemistry, 10791
new triterpenoid saponin from Chinese *Nothopanax davidii* Harms (*Araliaceae*), structure and use in prep of antiinflammatory Chinese medicine Shu Wu Jia, 11601
(±)-oxerine, monoterpene alkaloid from *Oxera morieri*, total synth from 3-bromopyridine, 13575
6,19-oxygenated 4α,18-epoxy-*neo*-clerodanes, diterpenoids from *Teucrium*, oxirane-opening reactions of−, biogenesis and antifeedant activity of, 5451
paniceins and renierins from the sponge *Reniera mucosa*, structure and cytotoxicity, 8153
pereniporin B, polygodial and warburganal, bioactive drimanes, semisynth from zamoranic acid, 10995
peyssonol A and B and hyatellaquinone, sesquiterpene hydroquinones from the alga *Peyssonnelia* sp. and *Hyatella intestinalis* sp., structures, 4179
picrodendrins U-W, norditerpene lactones from the bark of *Picrodendron baccatum*, structure, 10859
(−)-polygodial and 3β-acetoxydrimenin,

drimane sesquiterpenes, total synth from *S*-(+)-carvone *via* decalones, 10073, 10083
pseudopterolide, diterpenoid derived from the Red Sea whip *Pseudopterogorgia acerosa*, potential implications for its biological activity, 9223
salvigenane and isosalvipuberulan diterpenoids from aerial parts of *Salvia leucantha*, structure, 11593
(±)-stemodin, tetracyclic diterpene from *Stemodia maritima* L, total synth *via* Pd^{2+}-promoted cycloalkenylation reaction, 3673
stemodin(I) diterpene, synth of the A, B, C and D ring fragment from 1,4-cyclohexanedione monoethylene ketal, 1093
steroid and terpene intermediates having *cis* A-B ring fusions, synth by intramolecular Heck reactions, model studies for the total synth of complex cardenolides, 347
(+)-stoechospermol and (+)-spatol, spatane diterpenes from brown algae of the south Pacific, total synth, 12829, 12843
taxane related bridged eight membered rings by carbon-carbon bond cleavage *via* carbon centred radical strained tricyclo[5.2.1.$0^{2,6}$]decenes, 921
(±)-taxodione antineoplastic agent, total synth involving polyene cascade cyclisations mediated by $BF_3.CH_3NO_2$, 9229
taxoids, synth of intermediates toward the synth of taxoids by [2+2] photocycloaddition between enones and 2,3-dihydropyran, 9649
taxol derivs, study of retrosynthetic approach to the total synth of – by cleavage reactions of 10-deacetylbaccatin III, 6881
taxol, studies on the photochemistry of, 8633
taxuspines A-C, taxoids from Japanese yew *Taxus cuspidata*, inhibiting drug transport activity of P-glycoprotein in multidrug-resistant cells, 7401
teubrevins A and B, *Neo*-clerodane diterpenoids from *Teucrium brevifolium*, structures, 2289
ent-trichothecene, sesquiterpene of fungal origin, enantioselective synth, 1651
trifluoromethyl diterpenoids by carbonylene cyclisation/cycloalkylation of trifluoromethyl ketones, 11921
6β,7β,8α, and 6β,7β,8β-trihydroxy labdadienes, synth and structure, 2055
trimethylhydroazulenic skeleton of the lactarane sesquiterpenes, regioselective synth, 9657
upial, marine sesquiterpene from *Dysidea fragilis* sp., total synth from D-mannitol, 661
ursolic acid triterpenoid, stereochemistry of the hydrogen peroxide-acetic acid oxidation of, 11459
see also Gibberellins, Iridoids, Limonoids, Retinoids, Steroids and sterols, Vitamins
Tetramic acids *see* Pyrrolidinones
Tetronic acids *see* Furans
Theoretical calculations
ab initio – for reaction of aromatic compds with methyllithium, influence of aggregation and directing groups, 5903
ab initio calculations for prediction of energetic benefit of intramolecular aggregation of *o,o'*-dilithiobisaryls, 5881
ab initio MCSCF study of the homolytic S-S bond dissociation in disulfides, thiosulfinates and α-disulfoxides, 12469
ab initio molecular orbital calculations in study of conjugation characteristics in thieno[3,4-*d*]borepin and thieno[2,3-*d*]borepin, 6495
ab initio study of the monomer-dimer equilibrium in lithium and sodium *gem*-dichloro allyl and methyl systems, 12511
ab initio theoretical study of the monomer-dimer equilibrium in lithium and sodium *gem*-difluoro allyl and methyl systems, 8073
ab-initio calculations to study regioselectivity of reaction of diazomethane with allene, 5561
ab-initio MO calculations, homolytic bond-dissociation in peroxides, peroxyacids, peroxyesters and related radicals, 4795
addendum to SAM1 results previously published, 627
AM1, effects of α-substituents on the resonance demand of 4-methoxybenzyl carbocations, 7981
AM1 calculations to assess the substituent

effects on features of two mechanisms (elimination and internal return) in ester pyrolysis, 161
AM1 conformational models in study of substituent effects on 1,3-dipolar cycloadditions to some 1,1-diphenyl-2-aza-1,3-butadiene derivs, 3773
AM1 semiempirical methods for conformational analysis of thymine 1-(1-deoxy-β-D-psicofuranosyl)nucleoside, 6689
calculated and experimental circular dichroism of michellamines, dimeric naphthylisoquinoline alkaloids, 7807
conformational analysis of 2-chloro-2-fluoroacetaldehyde and calculated transition state structures of nucleophilic addition reactions, 11197
conformational change promoted by 3'-ethylphosphate at the branch-point of a tetrameric lariat-RNA, self cleavage reaction model, 8711
conformational studies by dynamic NMR, gear effect in substituted pyridones, 2561
conformational study of β-galactopyranosyl-(1-3) and (1-4)-xylopyranosides by NMR, molecular mechanics, molecular dynamics and semiempirical calculations, 6417
crystal density calculations of $C_{24}H_{28}$ cage-functionalised alkenes, 1687
density functional calculations on 5- and 6-membered nitrogen heterocycles, 2405
detection and characterisation of polymorphic modifications of anxiolytic drug ABECARNIL (isopropyl 6-benzyloxy-4-methoxymethyl-β-carboline-3-carboxylate), 13125
dipole moments of chloroalkenes and chlorocumulenes, identification of stereoisomers based on dielectric studies, 1707
effect of zinc halides on stereoselectivity of a Mannich type cyclisation in the tilivalline synth, computational chemical analysis, 9775
enumeration of chiral and achiral skeletons of position isomers of homosubstituted monocyclic cycloalkanes, 6663
epimerisation of tilivalline, pyrrolo-[2,1-c][1,4]benzodiazepine from *Klebsiella pneumoniae* var. *oxytoca*, 9781
and experimental studies on the structure of 2-formyl benzenesulfonamides, 5425
and experimental studies on the structure, reactions and reaction products of lithiodiazomethane and lithio-(trimethylsilyl)-diazomethane, 5889
factors influencing the reaction site in photoinduced addition reactions of chloranil with alkenes, 1199
Lsd program assisted NMR for structure determination of azadirachtin, limonoid antifeedant from *Azadirachta indica*, 12267
methoxy group effect on geometry of the benzene ring; molecular structure of 4-(4-methoxyphenyl)-2,6-diphenylpyridine and 1-methyl-4-(4-methoxyphenyl)-2,6-diphenylpyridinium perchlorate, 13155
MM2 calculations on 4- to 9-membered 1-methoxycycloalkenes, 5795
MM2 calculations for determining mechanism of the hydrogen peroxide-acetic acid oxidation of ursolic acid and related compds, 11459
MMX calculations for conformational analysis of 2,3-disubstituted 1,4-dithianes, 10107
MNDO calculations in study of stereoselective control in 1,3-dipolar cycloaddition of nitrones to substituted styrenes, 6671
MNDO calculations to investigate reversing of the regiochemical course in 1,3-dipolar cycloaddition of nitrile oxides by modification of dipolarophiles, 7969
molecular dynamics study to probe the basis for the binding specificity of calicheamicin γ1, 1379
molecular mechanics studies of OH-depleted calix[4]arenes; influence of OH groups on the relative stability of calix-[4]arene conformers, 13377
on the nature of the electronic interaction between conjugated nucleophiles and electrophiles, 5387
origin of transannular interactions in diketones and methylene-ketones as detected by ^{13}C NMR spectroscopy, *ab initio* MO study, 10813
PM3 calculations of Diels-Alder reactions of "pull-push" activated isoprenes with aceto- and acrylonitrile, 10379
PM3 calculations in synth of fused γ-

lactams by intramoleclar nitrone cycloaddition, 5503
PM3 and MNDO calculations for benzotriazole-assisted β-lithiation of (α-benzotriazolylvinyl)ethers, 6005
PM3 MO calculations, thermal ene reaction of 4-(2-alkenylamino)-3-formyl-2(2*H*)-chromenones, 1063
predictions of which diastereoisomeric salt precipitates during an optical resolution *via* diastereoisomeric salt formation, 6907
regioselective carbon-carbon σ-bond scission followed by 1,6-proton shift upon the reductive metalation of benzylidenecyclopropane derivs with lithium metal, 2439
relative rates of hydrogen-abstraction from eleven-substituted iso-propylbenzenes by bromine atoms, 7503
relative thermodynamic stabilities of γ-methylene-γ-butyrolactone, 1885
semi-empiric orbital calculations using a model for glycidic acids opening reaction by ammonia and amines, 9325
semiempirical calculations for the 3-aza-Claisen rearrangement, 10671
solution conformation of hexameric and heptameric lariat-RNA's and their self-cleavage reactions, 1777
stereochemical assignment of 2,5-*trans*-2',5'-*trans*-5,5'-dimethylperhydro-2,2'-bipyrimidine and heterocycles derived from its condensation with formaldehyde, 2497
supramolecular host systems; structural and conformational study of the 1,3,5,7-tetraoxadecalin core system, 9691, 9707
supramolecular host systems; 1,3,5,7-tetraoxadecalin, 1,2-dimethoxyethane and the *Gauche effect* reappraised; theory *versus* experiment, 9707
transition structures for [2,3]-Wittig rearrangements of stabilised and unstabilised allyloxy methyl anions; rationale for the dichotomous sense of stereoselection, 5917
zinc *meso*-tetraphenylporphyrin as shift reagent for NADH-models, 8227
see also Molecular modelling/mechanics

Thermochemistry
ab initio MCSCF study of the homolytic S-S bond dissociation in disulfides, thiosulfinates and α-disulfoxides, 12469
ab initio study of the monomer-dimer equilibrium in lithium and sodium *gem*-dichloro allyl and methyl systems, 12511
ab initio theoretical study of the monomer-dimer equilibrium in lithium and sodium *gem*-difluoro allyl and methyl systems, 8073
addendum to SAM1 results previously published, 627
association constants of alkaline complexes of macrolactones and crown ethers, 5381
CH-π and π-π interactions in complexation of amino acids by cyclotetrachromotropylene in aqueous solution, 3453
conformational equilibria of 2-halotetrahydrothiopyran *S*-oxides, diminution of the anomeric effect in S(O)-C-X compared to S-C-X segments, 4937
effect of zinc halides on stereoselectivity of a Mannich type cyclisation in the tilivalline synth, computational chemical analysis, 9775
effects of α-substituents on the resonance demand of 4-methoxybenzyl carbocations, 7981
epimerisation of tilivalline, pyrrolo[2,1-*c*]-[1,4]benzodiazepine from *Klebsiella pneumoniae* var. *oxytoca*, 9781
Ferrier reaction, mechanistic and stereochemical studies of – by using (*E*)-selectively deuterated methyl[6-^{2}H]-2,3,4-tri-*O*-benzyl-α-D-*xylo*-hex-5-enopyranoside, 4125
homolytic bond-dissociation in peroxides, peroxyacids, peroxyesters and related radicals, *ab-initio* MO calculations, 4795
kinetic vs. thermodynamic control and steric hindrance in allylation of 3-hydroxyisoxazole, 5-isoxazolone and 5-pyrazolone systems, 515
mechanism of alcohol oxidations by anionic peroxomolybdenum complexes, 5119
mesobiliverdin IXα and mesobilirubin IXα bridged between the propionic acid substituents, reactivity of pyrrole pigments, 3967
molecular dynamics calculations on bilirubin analogues with *N,N*-methylene

bridges, 9919
monomer-dimer equilibrium of 2-(lithiomethylene)-1,1,3,3-tetramethylindane, 5845
pericyclic reactions of 2-oxo-1,3-bis(ethoxycarbonyl)-2*H*-cyclopenta[*a*]acenaphthylene with nonconjugated dienes, cycloaddition reactivity of the decarbonylated cycloadducts, 13395
PM3 calculations of Diels-Alder reactions of "pull-push" activated isoprenes with aceto- and acrylonitrile, 10379
protonolysis rates, redox potentials, equilibrium constants for complexation of thieno[3,4-*d*]borepin and thieno-[2,3-*d*]borepin with amines, 6495
rates of Diels-Alder reactions when using 4-hydroxycyclopent-2-en-1-one and derivs as chiral synthetic equivalents of cyclopentadienone, 8515
relative thermodynamic stabilities of γ-methylene-γ-butyrolactone, 1885
relative thermodynamic stabilities of isomeric allyl and (*Z*)-propenyl ethers, relationship with ^{17}O and ^{13}C NMR spectra, 7293
solution conformation of hexameric and heptameric lariat-RNA's and their self-cleavage reactions, 1777
solvent effects on lipase-catalysed transesterifications of *cis*- and *trans*-4-methylcyclohexanols, 4681
substituent and temperature effects in Diels-Alder reaction of 2,5-dialkylfurans and fumaronitrile, 12125
supramolecular host systems; 1,3,5,7-tetraoxadecalin, 1,2-dimethoxyethane and the *Gauche effect* reappraised; theory *versus* experiment, 9707
temperature dependence of diastereoselective reduction of 2-t-butylcyclohexanone with diisobutylaluminium-2,6-di-t-butyl-4-methylphenoxide, 6819
theoretical and experimental studies of the 3-aza-Claisen rearrangement, 10671
thermodynamic stabilities of 3-ethylidenecyclohexenes and isomeric ethylcyclohexadienes, 11693
transition structures for [2,3]-Wittig rearrangements of stabilised and unstabilised allyloxy methyl anions; rationale for the dichotomous sense of stereoselection, 5917

Thiadiazoles
2,2'-bi(4,5-dihydro-1,3,4-thiadiazole) and 2,3-disubstituted 1,4-benzothiazine derivs, synth from *N,N'*-diaryloxalodihydrazonyl dihalides, 5091
fused 1,2,4-thiadiazoles from 5-chloro-1,2,4-thiadiazol-3(2*H*)-ones by reaction with ω-aminonitriles and aminoazoles, 7019

Thiazepines
1,3,6-benzothiadiazepino[3,2-*a*]benzimidazole derivs and [5+5] rigid bicyclic guanidines by reaction of bis(iminophosphorane) with isocyanate, 10029
chiral 1,4-diazepinones and 1,4-thiazepinones by diastereoselective ring chain transformation of αβ-unsaturated lactones or lactams, 10701

Thiazines
2-acyl-3,4-dihydro-1,4-benzothiazines, stereoselective synth from 2-benzylidene-4-methyl-3-oxo-2*H*-1,4-benzothiazine, 5037
dihydrobenzothiazinequinones by biomimetic oxidation of the antimelanoma agent 4-*S*-cysteaminylphenol and related catechol thioethers, 8757
2,3-disubstituted 1,4-benzothiazine derivs and 2,2'-bi(4,5-dihydro-1,3,4-thiadiazole), synth from *N,N'*-diaryloxalodihydrazonyl dihalides, 5091
α-methoxy-α-(6*H*-1,3-thiazin-2-yl)glycinates, synth as key intermediates in synth of 7-methoxycephems (analogues of 7-methoxycephalosporins), 12609
3-substituted-1,2,4-triazolo(4,3-*b*)(4,1,2)-benzothiadiazine-8-ones, laccase enzyme catalysed synth from 5-substituted-4-amino-3-mercapto-1,2,4-triazoles, 4019
thiadiazine diacyclonucleosides, regioselective lipase-mediated acylation-deacylation in, 13865

Thiazoles
2-alkyl-3-hydroxy(or 3-aminoalkyl)-benzisothiazole-1,1-dioxides, in equilibrium with corresponding benzenesulfonamides, 5425
4,5-dichloro-1,2,3-dithiazolium chloride (Appel's Salt), reactions with *N*-nucleophiles, synth of imines containing the 1,2,3-dithiazole ring, 10037

4,5-disubstituted-2-amino- and 2-acetamido-thiazoles by dimerisation of α-thiocyanato-β-dicarbonyl compds, 7253
pyrrolo [2,1-*b*]thiazole by reaction of *N*-(2-mercaptoethyl)enamine with phenylglyoxal or glyoxal, 7849
spiro anomeric oxathiazole derivs by treatment of 2,3,4,6-tetra-*O*-acetyl-1-*S*-(*Z*)-benzhydroximoyl-1-thio-D-glucopyranose with *N*-bromosuccinimide, 6559
3-(thiazol-2'-ylidene)pyridines and fused derivs, expeditious route to synth using isothiocyanates, 5807

Thiazolines
2-amino thiazolines from glycal derived 2-deoxy-2-iodo-pyranosyl isothiocyanates by treatment with ammonia, 2877

Thiepins
pentathiepins and trithianes from two *Lissoclinum* sp. and a *Eudistoma* sp., inhibitors of protein kinase C, 12785

Thiiranes, thiirenes
thiiranes from sulfenocyclisation of alkenes and alkynes using 4'-nitrobenzenesulfenanilide, 12395

Thioacetals
hemidithioacetals and α-phosphonyl thiols, synth by reduction of phosphonodithioformates, 10277
β-hydroxydithioacetals, thermal dehydration and dethioacetalization of – with dimethyl sulfoxide, synth of αβ-unsaturated aldehydes, 5783

Thioacids
arylthioacetic acids, photoredox reactions with polypyridyl chromium(III) complexes in acetonitrile and aqueous media, 9447
S-phenylthioacetic acids, oxidation of – by Ce(IV), kinetics and mechanism of, 13731

Thioamides
titanium enolates and "ate" complexes of *N,N*-disubstituted amides and – in the Michael reaction, 7193

Thiocarbonyl compds
substituted vinylthionium ions, allylation with, 9365, 9377
see also other specific thiono-compds

Thiochromanes
thiochroman-4-ones, reaction with isoamyl nitrite, synth of thiochroman-3,4-diones, reactivity of, 7865

Thiocyanates
alkyl thiocyanates from hydrocarbons by utilization of the $GoAgg^{IV}$ system in the presence of sodium thiocyanate, 47
α-thiocyanato-β-dicarbonyl compds, dimerisation to 4,5-disubstituted-2-amino- and 2-acetamido-thiazoles, cyclisation to thiazole and oxathiole heterocycles, 7253

Thioesters
tin enolates of 2-pyridylthioesters, condensation with imines, synth of β-lactams, 5821
titanium enolates of 2-pyridyl thioesters, condensation with imines bearing a chiral auxiliary, synth of β-lactams, 9471

Thioethers *see also* Sulfides

Thioglycosides
(*R*) *S*-benzyl thioglycerate from fermentation of D-mannose, D-glucose and D-fructose, 857
thioglycosides by reaction of sugar thiocyanates with Grignard reagents, 2975

Thiolation
of 5-methoxyindoles, route to 5-hydroxyindoles, 13433

Thiols
arylthiol addition to 5-alkoxy-2(5*H*)-furanones, kinetic resolution of furanones, 4775
β-arylthio alcohols, Ritter-type substitution reaction, retention of configuration through the anchimeric assistance of the arylthio group, 8997
(1,1'-binaphthalene)-2,2'-dithiol, resolution by enzyme catalysed hydrolysis of the corresponding *S,S'*-dipentanoate, 7109
copper(I) thiolate complexes derived from mercaptoaryl-oxazoline ligands as catalysts in enantioselective 1,4-additions of Grignard reagents to enones, 4467
for palladium(0)-catalysed alkylation of allylic carbonates, synth of allylic aryl carbonates, 10321
α-phosphonyl thiols and hemidithioacetals, synth by reduction of phosphonodithioformates, 10277

Thiones *see* Thiocarbonyl compds

Thiophenes
benzo[*b*]thiophen-3-ones on ring contraction of sulfenamides derived from thio-

chroman-4-ones, 827
3,4'- and 3,3'-di(2-hydroxyethyl)-2,2'-bithiophene *via* palladium catalysed coupling of thienylstannanes with thienylbromides, 11249
3-methoxy-2,5-dimethylthiophene and 3,4-dimethoxy-2,5-dimethylthiophene, synth from 3,4-dibromo-2,5-dimethylthiophene and sodium methoxide using Cu(I)Br as a catalyst, 11533
methyl *N*-methyl- and methyl *N*-(2,4,6-trimethyl)phenyl-2-carboximidates of thiophene and furan, synth and investigation of metalation properties, 4149
poly(phenylseleno)thiophenes by electrophilic phenylselenylation of thiophenes, 10549
(*Z*)-1-thioaurones, dioxirane oxidation of –, 13113

Thiopyrans
cyclopenta[*c*][1]benzothiopyran-2-one from thiochroman-3,4-diones, cycloaddition with DMAD to dibenzo[*bd*]-thiopyran, 7865
5,6-dihydro-1,4-dithiins, diastereoselective desulfurisation of, synth of *cis* configurated olefins, total synth of (*Z*)-9-tricosene (muscalure), 7265
2-halotetrahydrothiopyran *S*-oxides, conformational analysis of–, diminution of the anomeric effect in S(O)-C-X compared to S-C-X segments, 4937
2-methyl-, 2-phenyl-, and 2,3-trimethylene-1,4-benzodithiin-1,4-tetroxide, synth from benzene-1,2-dithiol, dienophilic reactivity of, 7913

Thioureas
iodothiourea from glycal derived 2-deoxy-2-iodo-pyranosyl isothiocyanates by treatment with ammonia, 2877

Tin and compds
bis(tributylstannyl)acetylene in the presence of alkyl chloroformate for ethynylation of azaaromatics, 13089
(*E*)-2-methyl-1-alkenyltrimethylstannanes by zirconium-catalysed methylalumination of 1-alkynes, 5189
organostannanes, cross-coupling with organic halides, synth of 2-substituted alkyl (*Z*)- and (*E*)-2-alkenoates and (*Z*)- and (*E*)-α-ylidene-γ-butyrolactones, 12029
organostannanes and organozinc reagents in palladium-catalysed coupling reactions with 6-halopurines, 9743
stannylation in the electrophilic 2- and 4/6-pyrimidine position and use of stannylpyrimidines in coupling and tin-lithium exchange reactions, 275
tin enolates of 2-pyridylthioesters, condensation with imines, synth of β-lactams, 5821
3,4-bis(tri-*n*-butylstannyl)furan and 3-(tri-*n*-butylstannyl)furan, synth as building blocks for 3,4-disubstituted furans and 3-substituted furans respectively, 9583
2-tributylstannyl-1-alkenes from 2-tributylstannyl-2-propen-1-yl acetate, 4853
tributyltin hydride route to 2-acyloxyalkyl radicals, 5131

Titanium and compds
α,α,α',α'-tetraaryl-2-mono- and -2,2-disubstituted-1,3-dioxolan-4,5-dimethanolates (TADDOLates) of titanium(IV) as catalysts for addition of diethyl and bis-(3-buten-1-yl)zinc to aldehydes, 4363
complex prepared *in situ* from titanium tetraisopropoxide [Ti(*O*-*i*-Pr)$_4$] and chiral Schiff bases as catalyst for enantioselective addition of trimethylsilyl cyanide to aldehydes, 4385
Ti-TADDOLate catalysed enantioselective addition of alkyl- and aryl-titanium derivs to aldehydes, 7473
titanium enolates of 2-pyridyl thioesters, condensation with imines bearing a chiral auxiliary, synth of β-lactams, 9471
titanium enolates and "ate" complexes of *N,N*-disubstituted amides and thioamides in the Michael reaction, 7193
titanium enolates, β-lactams by condensation of - of 2-pyridylthioesters with imines; influence of the imine structure on the *trans/cis* stereoselectivity, 2939
titanium *versus* tin enolates of 2-pyridylthioesters, condensation with imines, synth of β-lactams, 5821
titanium(IV) isopropoxide for cleavage of α-epoxy alcohols n synth of deoxysugars, 8603

Toxins
AAL-toxins TA$_1$ and TA$_2$, host-specific toxins produced by *Alternaria alternata*,

absolute configuration, 13347
(±)-aflatoxin B_1, use of equilibrium mixture 3,4-dihydro-4-formyl-2-hydroxy-2*H*-benzopyran and 2,3,3a,8a-tetrahydro-2-hydroxyfuro[2,3-*b*]benzofuran moieties to generate furo[2,3-*b*]benzofuran, 7597
botcinolide, a new phytotoxic trihydroxylated nona-lactone esterified with 4-hydroxy-2-octenoic acid, a metabolite of the mould *Botrytis cinerea*, structure, 11585
ciguatera and its off-shoots; research into molecular structure, 3
ciguatoxin, synth of dehydrooxepane unit of ciguatoxin by Nicholas reaction of alkynyl sugars, 12883
ciguatoxin, synth of pyran subunits of marine *trans*-fused polyether toxins, epimerisation of alkynyl sugars through cobalt complexes, 5633
dinoflagellate *Prorocentrum lima* responsible for diarrhetic shellfish poisoning (DSP); isolation, structure and biosynthetic origin of two ester derivs of okadaic acid from –, 9175
foeniculoxin, phytotoxic geranylhydroquinone from *Phomopsis foeniculi*, 10371
(+)-ipomeamarone and (–)-ngaione from *Ipomea butatas* and *Eremophia latrobei* respectively, total synth from *sec, sec*-1,3-diol *via* hydrogen abstraction, 11647
(–)-isoseiridine, phytotoxin from *Seiridium cardinale*, total synth by cross-coupling of vinyl triflates with 9-alkyl-9-borobicyclo-[3,3,1]nonanes, 5489
isotactic nonamethoxy-1-pentacosene, from blue-green alga *Scytonema ocellatum*, synth and absolute configuration, 11133
lintenolides, pentacyclic bioactive sesquiterpenes from the Caribbean sponge *Cacospongia* cf. *linteiformis*, ichthyotoxicity and antifeedant activity, 849
lissoclinotoxins, antibiotic polysulfur derivs from the tunicate *Lissoclinum perforatum*, revised structure of lissoclinotoxin A, 5323
podophyllotoxin, asymmetric synth of an isomer of, 10829
solenopsins, venom alkaloids of *Solenopsis geminata* and *invicta* ants, absolute configuration, 8465
strychnine, prep of a hexacyclic enamine intermediate for conversion into Strychnos alkaloids, 2681
(±)-surugatoxin and neosurugatoxin from toxic ivory shell *Babylonia japonica*, total synth, 2729, 2753
ent-trichothecene, sesquiterpene of fungal origin, enantioselective synth, 1651

Transfer reactions
amide-based protecting/radical translocating (PRT) groups, generation of radicals adjacent to carbonyls by 1,5-hydrogen transfer reactions of *o*-iodoanilides, 7343
1,5-hydrogen atom transfer in monocyclic analogue of neocarzinostatin chromophore relevant to mechanism and cleavage selectivity of diyl based DNA cleaving agents, 1419
intramolecular 1,6-hydride transfer in reaction of acyclic 1,6-diols with 85% phosphoric acid, synth of ketones, mechanism, 7307
oxygen transfer of amines using the oxaziridinium salt derived from dihydroisoquinoline as the transfer reagent, synth of nitroso derivs, nitro compds, *N*-oxides and nitrones, 12185

Transition states
molecular mechanics model of the transition state for the addition of allyl and crotyl boronates to aldehydes, 8815

Trapping reactions
trapping by allyl silanes of oxonium ions generated from α-alkoxysulfones; towards the synth of C_{37}-C_{42} fragment of rapamycin, 835
trapping of carbonyl ylids formed from transition metal-catalysed decomposition of diazo(trialkylsilyl)-acetates, 7435
trapping of the quinone imine intermediate in reaction of 1-(4-methoxyphenyl)-azetidin-2-ones with cerium(IV) ammonium nitrate (CAN), 4185
trapping of ω-acyl-substituted acylpalladium derivs with C- or O-enolates in carbonylative cyclisation, 425

Triazines
1-aryl-3,3-disubstituted triazines, synth on an ion-exchange resin support, 9107
3-substituted-5*H*-1,2,4-triazino[5,6-*b*]indoles, reactions with π-acceptors, synth of

nitrogen heterocycles, 9997
Triazoles
1-aryl-3-benzoylamino-1,2,4-triazoles, synth from rearrangement of *N*-(5-phenyl-1,2,4-oxadiazol-3-yl)-*N'*-arylformamidines, 7315
bicyclic – by a diazo transfer reaction between cyclic enaminones and 5,7-dinitro-3-diazo-1,3-dihydro-2*H*-indol-2-one, 6723
7- and 5-substituted triazolo[1,5-*a*]pyrimidines by reaction of vinylogous iminium salts with 3-amino-1,2,4-triazole, 12113
3-substituted-1,2,4-triazolo(4,3-*b*)(4,1,2)-benzothiadiazine-8-ones, laccase enzyme catalysed synth from 5-substituted-4-amino-3-mercapto-1,2,4-triazoles, 4019
Triazolines
4-methyl-1,2,4-triazolinedione, reactions with allylic ethers and sulfides, comparison of substituent field effects on the regiochemistry, 8569
Triols
branched triols by ring opening of homochiral *cis* epoxides derived from tris-(hydroxymethyl)methane equivalents, 12245
by regioselective reductive ring opening of epoxides derived from asymmetrized 2-alkenyl-1,3-propanediols, 2219
Trithianes
pentathiepins and trithianes from two *Lissoclinum* sp. and a *Eudistoma* sp., inhibitors of protein kinase C, 12785
Troponoids
(+)- and (−)-calystegine B_2, polyhydroxylated nortropane derivs, total synth from D-glucose *via* Ferrier reaction, 10443
tropolones by rhodium(II)-catalysed reactions of vinyldiazomethanes with oxygenated dienes, 9883

Ultrasound effects *see* Sonochemistry
Ultraviolet spectra *see* Electronic spectra
Uracils
2'-*C*-alkynyl-2'-deoxy-1-β-D-arabinofuranosyluracil *via* radical deoxygenation of t-propargyl alcohols in the sugar moiety, 10397
5-bromoethynyluracil, synth from dibromovinyluracil, antiviral activity, 8371
di-, tetra- and pentapeptide derivs of 5-fluorouracil, synth by addition of ethyl glyoxylate to *N*-(benzyloxycarbonyl)-amino acid amides, 3747
1-(2,3-dideoxy-2-*N*-dialkylamino-5-*O*-trityl-D-glycero-pent-2-enofuranosyl)uracil, synth by reaction of 2',3'-di-*O*-mesyl-*lyxo*-uridine with secondary amines, 13251
O-protected deaminotunicaminyluracil, synth, 2965
substituted 2-thiouracils and pyrimidine-2-thione, oxidation by 3,3-dimethyl-1,2-dioxirane and ozone, synth of desulfurised products, 3259
Ureas
N-cyano-*O*-phenylisoureas and related compds, stereoisomerism in, 12211
Uridines
5-bromoethynyl-2'-deoxyuridine, synth from dibromovinyluracil, antiviral activity, 8371
2',3'-di-*O*-mesyl-*lyxo*-uridine, reactions with secondary amines, synth of enaminonucleosides, 13251
2'-*O*-methyl uridine, synth from 2'-*O*-methyl sugar synthon, 5361, corrig. 7341
nucleoside, synth by rearrangement of allylic selenides, 689
3',5'-*O*-bis- tetrahydropyranyl, trimethylsilyl and t-butyldimethylsilyl derivs of 5-bromo-2'-deoxyuridine, synth, characterisation and reactivity, 1699

Vanadium and compds
$VO(OEt)Cl_2$ as one-electron oxidant in desilylation of silyl enol ethers and allylic silanes, 10207
Vilsmeier reactions/reagents
reaction of – with 6-chloro-4- and 5-hydrazino-2-phenyl-3(2*H*)-pyridazinones, synth of pyrazolo[3,4-*d*]pyridazinones, 12933
Vinylation
of alcohols with iodo-acetal and subsequent acetal-hydrolysis-dehydration reaction, 3389
of tertiary allylic alcohols with iodo-acetal, new protocol for the synth of isoprenoid aldehydes, 3389

Vitamins
A, carotenoid aldehydes by Heck vinylation of tertiary allylic alcohols and a hydrolysis/dehydration reaction, 3389
B_{12}; discovery of nature's pathway to, perspective, 13315
D, 1α,25-dihydroxyvitamin D_3, route to A-ring synthon from *R*-(−)-epichlorohydrin, 13369
D, 11-fluoro-1α-hydroxyvitamin D_3, synth by fluorination of the corresponding 11-hydroxy derivs using FAR and DAST, study of folded vitamin D conformation in solution, 7049

Water, reactions in
see Solvents and solvent effects
Wittig rearrangements *see* Rearrangements

X-ray crystal structures
exo-2-acetamido-7-trimethylstannylbicyclo-[2.2.1]heptene, 2415
(5*R*,12*S*,20*R*)-7α-acetoxy-20-*O*-benzoyl-15,16-epoxy-6α-hydroxy-4β,18-methylene dioxy-19-*nor*-*neo*-cleroda-13(16),14-diene -20,12-hemiacetal, 13553
2-acetyl-4-methyl-3-phenyl-3,4-dihydro-2*H*-1,4-benzothiazine, 5037
(5*S*,1'*R*,2'*R*) 2-acetyl-5-(1',2',3'-triacetoxy)propyl-1-benzyl-pyrazolidin-3-one, 7219
3β-(acetyloxy)-11α,12α-epoxy-14α-hydroxy-iso-urs-28-oic acid δ-lactone, 11459
5-alkoxy-2(5*H*)-furanones, 11167
2-amino-3-cyano-6-methyl-5-(*N*-oxobornane-10,2-sultam)-4-phenyl-4*H*-pyran, 3509
11β-angeloyloxy-α-santonin, 5439
anxiolytic drug ABECARNIL (isopropyl 6-benzyloxy-4-methoxymethyl-β-carboline -3-carboxylate), detection and characterisation of polymorphic modifications of, 13125
trans-12-azido-1,2,11,12-tetrahydro-3-methyl-11-benz[*j*]aceanthrylenol acetate, 8505
(7*S*,8*R*,11*R*,13*S*)-11-benzenesulfonyl-7-phenylmercurio-8,13-epoxy-labdan-15-ol, 139, corrig. 4037
(1*R*- and 1*S*,2*R*,3*R*)-*N*-benzenesulfonyl-*N*,O^3-isopropylidene-1-(2-furyl)-2-amino-butane-1,3-diol, 7611
2,3-bis(benzimidazol-1'-yl)-1,4-dihydroxy-benzene, 12489
(2*R*,4*S*)-3'-benzoyl-2'-phenyl-1,2-dimethyl spiro[cyclohex-1-ene-4,4'-oxazolidin]-5'-one, 941
(1*S*,2*S*,2'*R*,4*S*)-3'-benzoyl-2'-phenylspiro-[bicyclo[2.2.2]oct-5-one-2,4'-oxazolidin]-5'-one, 941
rel-(1*S*,2*S*,6*R*,8*S*)-2-benzoyloxytricyclo-[6.3.1.$0^{1,6}$]dodec-4-en-11-one, 1093
3-(benzylcarbamoylimino)-6-chloro-3*H*-[1,2,4]thiadiazolo[3,4-*b*]benzoxazole, 7019
3-(benzylcarbamoylimino)-6-methyl-3*H*-[1,3,4]thiadiazolo[2,3-*c*][1,2,4]thiadiazole, 7019
3-(benzylcarbamoylimino)- and 3-(benzylcarbamoylimino)-5,6-dihydro-3*H*-thiazolo [2,3-*c*][1,2,4]thiadiazole, 7019
(1*,5*R**)-6-benzyloxy-2-carboxylate-7-oxo-6-azabicyclo[3.2.0]hept-2-ene, 12049
2-benzyl-4-(4',4'-spiro-1'-phenyl-3'-meth yl-4',5'-dihydro-5'-oxopyrazolinyl)-7-phenyl-6,8-dioxo-3,7-diazabicyclo[3.3.0]-octane, 895
(1*R*,3*S*,4*R*,5*S*)-(+)-4-benzyl-1,8,8-trimethyl -3-thiabicyclo[3.2.1]octane-3-oxide, 6061
brominated Michael product from cycloaddition between anthrone and *N*-methylmaleimide, 4543
N-(4-t-butyl-1-mesityl-7,7-dimethyl-1-phosphaocta-1,3-dien-5-yn-2-yl)morpholine, 759
9-t-butyl-9-(chloromethyl)fluorene and 9-(chloromethyl)-9-neopentylfluorene, 5971
1-(t-butyldimethylsilyloxy)-9-oxabicyclo-[9.2.2]pentadec-11-en-2,6-diyne, 1469
1-(t-butyldimethylsilyloxy)-10-ethylidene-8-hydroxybicyclo[7.3.1]trideca-2,6-diyne, 1469
(2*S*)-2-[(*R*)-t-butylsulfinyl]-1-phenyl-3-(trimethylsilyl)-1-propanol, 1045
$C_{24}H_{28}$ cage-functionalised alkenes, 1687
6-chloro-1-cyano-2-azabicyclo[3.2.0]hept-6-ene-3-one, 5515
7-chloro-5-hydroxy-7-methyl-5-phenyl-3,4,4a,5,6,7,8,8a-octahydro- isocoumarin and -naphthalen-1(2*H*)-one, 8445
α-chloro-α-dimethoxyphosphorylmethyl *p*-tolyl sulfoxide, 8053

(2*R**,3*S**)-3-(1-chloropropyl)-pyrrolidine-1,2-dicarboxylic acid dimethyl ester, 1907
complexes of Rebek's diacid with pyrazine and quinoxaline, 8559
Copper(II) chloride complex of 3,3'-tetramethylene-2,2'-bi[1,10]phenanthroline, 10685
cryptand[3.3.3]-potassium iodide complex, 2721
cyano(5-phenyltetrazol-1-yl)methylenetriphenylphosphorane, 1889
7-cyano-3*H*-azepin-2(1*H*)-one and 4-chloro deriv, 5515
8-cyano-8-deoxyaustraline, 2131
1,8-*O*-cyclohexylidene-6-*epi*-7-*O*-methoxymethyl-6-*C*-vinylcastanospermine, 2131
3,4,4α,5,6,7,8β,9,10,10aα-decahydro-4a,8-epoxy-3-oxo-1,1,8-trimethyl-1*H*-cyclo octa[c]pyran, 9229
(2*S*)-2-deoxy-2-(3'-hydroxypropyl)-4,5:7,8-di-*O*-isopropylidene-3-*O*-trimethylsilyl-β-D-manno-3,6-furanoso-3-octulosonate-1,3'-lactone, 11885
3,9-diacetyl- and 3,9-diacetyl-7-benzyl--10-hydroxy-10-methyl-1,2,7-triazaspiro-[4.5]dec-2-ene, 12133
(7a*S*)-3a,6-diazaperhydroindane-4,7-dione-5-spiro-1'-[(1'*R*,2'*R*)-2'-phenylcyclopro pane], 12443
(2*S**,3*S**,4*R**)-2-(*N*,*N*-dibenzylamino)-1-phenyl-4-phenylseleno-3-octanol, 6049
(2*S**,3*S**,4*S**)-2-(*N*,*N*-dibenzylamino)-3-(3,5-dinitrobenzoyloxy)-1-phenyl-4-phenyl-seleno-octane, 6049
N,*O*-dibenzylcinchonidinium bromide, 4507
(3*R**,4*S**,5*R**)-3,5-dichloro-4-methyl-oxocan-2-one, 12415
(3*R**,5*R**)-3,3-dichloro-7,7-dimethyl-oxocan-2-one, 12415
(3*R**,5*R**,8*S**)-3,5-dichloro-8-phenyl-oxocan-2-one, 12415
2-(2"-dichloroacetamidobenzyl)-3-(3'-indo lyl)-quinoline, 10803
3,4-dicyano-1,7-dimethyltricyclo[3.2.1.0^{2,7}]-oct-3-ene, 9189
(7a*SR*,11a*RS*,11b*RS*)-7a,11a-dicyano-2,3,9,10-tetramethyl-1,4,7a,8,11,11a-hexahydro-11b*H*-pyrido[2,1-*a*]phthalazine, 9189
1-(2,3-dideoxy-2-*N*-dialkylamino-5-*O*-trityl-D-glycero-pent-2-enofuranosyl)uracil, 13251
5,6-dideoxy-5-(benzyloxycarbonyl)amino-β-D,L-altropyranose, 1135
6(*R*-6,8-diethoxycarbonyl-6-methyl-2-methylthio-5,6-dihydro-9*H*-pyrimido[4,5-*b*][1,4] diazepin-4(3*H*)-one, 13511
exo(5,6-dihydro-3,8-phenanthrolino)-2':3', 5:6-*endo*-5',6'-cyclopentenonorbornane, 383
5,10-dihydro-7,9-dimethoxy-4b,9b,10-trihydroxy-indeno[1,2-*b*]indole, 10983
1,4-dihydronaphthalene dioxetane and benzo[*d*]cyclopropa[*b*]cyclohexanone, 9009
3β,13-dihydroxy-11α,12α-epoxyursan-28-oic acid γ-lactone, 11459
3,6-dihydroxy-*exo*-9-(2-nitrophenylthio)-*endo*-10-chloro-tricyclo[6.2.1.0.^{2,7}]undeca-2(7),3,5-triene, 9933
3,6-dihydroxy-*exo*-9-fluoro*syn*-11-dichloro-tricyclo[6.2.1.0.^{2,7}]undeca-2(7),3,5-triene, 9933
N,*N*'-[(4",5"-dimethyl)1",2"-phenyl ene]-2,2'-dimethyl-bisoxazolidine, 9951
12,13-dimethyl-2,7-dioxa-5,10-diaza-tricycle [4,4,4,0^{1,6}]*trans*-tetradecan-12,13-diol, 9951
1,4-bis-(1a,5a,6a-3,6-dimethyl-3-azabicyclo[3.1.0]hex-6-yl)-piperazine, 715
2,7-dimethyltricyclo[4.3.1.1^{3,8}]undecane-*syn*-2, *syn*-7-diol, 8749
dinaphth[2,1-*c*:1',2'-*e*]oxepin-3-(5*H*)-one, 2831
3,5-dinitro-benzoic acid (2a*S**,5a*S**,8a*R**)-5a-methyl-octahydro-cyclobuta[*d*]inden-2a-yl ester, 10879
[dipyridyl(2-*exo*-acetoxy-5-*endo*-vinyl-3-*endo*-norbornyl)palladium][BF_4], 539
rac-(9*S*)-(1,3-dithian-2-yl)-11-nor-drim-7-ene, 139, corrig. 4037
endo,endo-7,8-dibromo-5,6-benzobicyclo-[2.2.2]octa-2,5-ene, 10555
14,17α-ethanoestra-1,3,5(10)-triene-3,16α,17β-triyltriacetate, 6363
etherate of 2-(lithiomethylene)-1,1,3,3-tetramethylindane, 5845
3-(ethynyl)-2-(ethoxy-carbonyloxy)indole-1-carboxylates, 12697
exo,anti-4-hydroxy-8-bromo-6,7-benzobicyclo[3.2.1]octa-2,6-diene, 10555
exo,syn-4-hydroxy-8-bromo-2,3-benzobicyclo[3.2.1]octa-2,6-diene, 10555
exo-[4-(*p*-fluorophenyl)-3,6-difluoro-9,10-di

hydrophenanthreno]-2':3',9:10-norbornane, 383
helioxenicins B, diterpene from blue coral *Heliopora coerulea*, 9989
4-hydroxy-1-aza-adamantane-2-carboxylic acid methyl ester, 8853
2-hydroxy-2-(4-amino-2,6-dimethoxyphenyl)indan-1,3-dione, 10983
5-hydroxy-7-methylidene-5-phenyl-3,4,4a,5,6,7,8,8a-octahydroisocoumarin, 8445
3-(2-hydroxynaphthyl)-2-methyl-3,4-dihydro-1(2*H*)-isoquinolinone-4-carboxylic acid, 9399
iodoalkylidene lactones, 2161
(−)-isodideoxyadenosine, 7747
isofavelol 4-bromobenzoate, 5659
1(*R*),5(*S*),5'(*R*),8(*S*)-8-[5'-(1',2':3',4'-di-*O*-isopropylidene-α-L-*arabino*-pyranosidyl)]-1-aza-7-oxa-4-thiadioxybicyclo[3.2.1]-octane, 5495
6-lithio-trimethylsilyl-diazomethane.2-lithio-4,5-bis(trimethylsilyl)-1,2,3-triazole.6-diethyl ether.hexane, 5889
malabarolide B1 and menispermacide, furanoid diterpenes from stems of *Tinospora malabarica*, 12109
meso-tetrakis[2,6-bis(2,3,4,5,6-pentafluorobenzyloxy)phenyl]porphyrin, 11097
1,5-methano-2,11b-diazocino[4,3-*a*]indole, 6585
(1*R*,2*S*,2'*R*,4*S*)-2-methoxy-3'-benzoyl-2'-phenylspiro[bicyclo[2.2.2]oct-5-ene-2,4'-oxazolidin]-5'-one, 941
3*SR*,4*SR*,5*SR*-4.5-bis(methoxycarbonyl)-2-t-butyl-3-ethyl-isoxazolidine, 7417
methyl 4,6-*O*-benzylidene-2-deoxy-3-*C*-[(1*S*)-2-carboxy-1-ethyl-2-propenyl]-α-D-ribo-hexopyranoside-γ-lactone, 1111
(−)-(1,2*R*,4*R*,6*R*,7*R*)-methyl 4-hydroxy-6-methoxy-3-oxo-endo-tricyclo[5.2.1.$0^{2,6}$]-dec-8-ene-4-endo-carboxylate, 10597
methyl (1*R**,5*S*,6*S*,7*S*)- and (1*R**,5*R*,6*S*,7*S*)-7-hydroxy-1,5-dimethyl-8-oxabicyclo[4.3.0]-nonan-4-one-7-carboxylate, 11553
methyl 2-(3,4,5-trimethoxyphenyl)-4-(3,4-methylenedioxyphenyl)-4-oxo-2-butenoate, 9287
2-methyl-2-lithiodithiane.TMEDA and 2-phenyl-2-lithiodithiane.TMEDA.THF, 5869
(3*R*,4*R*)-3-methyl-4-phenyl-1-tosylazetidin-2-one, 12755
(1*RS*,4*SR*,5*RS*,6*SR*)-4-methyl-5,6-epoxycyclohex-2-en-1-yl 4-nitrobenzoate, 3709
methyl-(*S*-2-(methoxymethyl-)pyrrolidin-1-yl), 5719
(±)-(*R**,*S**)-α(1-methylsulfonyl-3-butenyl)-2-furanmethanol, 6767
montanin E, deriv of 6,19-oxygenated 4α,18-epoxy-*neo*-clerodanes, 5451
nitropolyzonamine, 6129
(±)-5-nor-6-desmethyl-4,5-secoartemisinin, 957
1,2,3,4,4a,9,9a,10-octahydro-9,10-*exo*-methano-4a,9a-*exo*-epoxy-2,3-dioxaanthracene, 5753
octamethyl-tetraepoxy-tetraethenotetrabenzo[*a,f,k,p*]cycloeicosene, 9113
2-oxa-3-hydroxy-12-phenylthio-tetracyclo-[7.3.0.$0^{3,8}$.$0^{7,11}$]dodec-4-en-6-one, 9933
N-(3-oxobutanoil)bornane-10,2-sultam, 3509
N-*cis*-(2-phenyl-2-hydroxycyclohexyl)-4-chlorobenzamide, 209
3-phenyl-2-(*p*-toluenesulfonyl)-1,2-dihydro-4(3*H*)-isoquinolinone, 10971
(4*R*,*S*,5*R*,*S*)-1,3-di[(3*SR*,2*RS*)-3-phenyl-3-hydroxy-2-methylpropionyl]-*trans*-4,5-tetramethyleneimidazolidin-2-one, 6621
exo-(4-phenyl-9,10-dihydrophenanthreno-2':3',9:10-norbornane, 383
5-phenyltetrazol-1-yl(1-phenyltetrazol-5-yl) methylenetriphenylphosphorane, 1889
phosphocin, ($ClCH_2CMe_2CH_2O$)P(O)-(O-2,4-(t-Bu)$_2C_6H_2$)$_2CH_2$, 6989
1-phthalimido-1-thio-pyridyl-2,3,3-trimethylbutane, 7029
picrodendrin U, 10859
6,6'-(piperazine-1,4-diyl)-bis[1α,3β,5α,6β-3-(4-methylpiperazin-1-yl)-bicyclo[3.1.0]-hexane-6-carbonitrile], 731
prenyl bromohydrin MTPA esters, 11219
product from t-butyloxycarbonylation of Boc_2Phe-Leu-OBn, 5309
products from cycloaddition reactions of 2-methyl-, 2-phenyl-, and 2,3-trimethylene-1,4-benzodithiin-1,4-tetroxide, 7913
N-(2'-pyridylimino)-pyridinium aminide, 4995
salvileucantholide diterpenoid from aerial parts of *Salvia leucantha*, 11593
spiro[2,3-dihydro-4,6-dimethoxy-3-oxoindole-2,3'-phthalide], 10983
spiro anomeric oxathiazole sugar deriv

from treatment of 2,3,4,6-tetra-*O*-acetyl-1-*S*-(*Z*)-benzhydroximoyl-1-thio-D-glucopyranose with *N*-bromosuccinimide, 6559
stereoisomers of 2,5-diethoxy-1,4-dioxane-2,5-dimethanol, 10055
(±)-(2β,3α,3aβ,6β,7aα)-1,6,7,7a-tetrahydro-2-t-butylsulfonyl-[3a,6]-epoxy-[3a,H]-inden-3-ol, 6767
(2α,3β,4α,5α)- and (2α,3α,4α,5α)tetrahydro-5-phenyl-2-trimethylsilyl-2,3,4-furantricarboxylic acid trimethyl ester, 7435
endo-7,8,9,10-tetrahydro-11-benzyl-7,10-iminocyclohepta[*de*]naphthalene-8,9-*N*-phenyldicarboximide, 7495
1,2,8,9-tetrahydrocyclohepta[1,2,3-*fg*:4,5,6-*f'g'*]diacenaphthylene-5-one, 2361
tetrahydrooctamethyl-triepoxyethenobenzo-cycloeicosine, 9113
tetrahydropyrido[2,3-*d*]pyrimidine deriv, 8085
cis-1,3,5,7-tetraoxadecalin and its 2,6-di(*trans*-styryl) deriv, 9691
teubrevins A, 2289
5-(*p*-toluenesulfonyl)-5,6,13,14-tetrahydro-12(11*H*)-benzo[*c*]phenanthridinone, 10971
($S_1S_2R_s$)-2-*p*-tolylsulfinylcyclopentanol, 9355
(2*R*,3*S*)-2-(*p*-tolylsulfonyl)-1-(trimethylsilyl)-3-octanol, 1045
1,2,7-tri-*O*-acetyl-8-deoxy-8-fluoroaustraline, 2131
3,16α,17β-triacetoxy-14,17α-ethenoestra-1,3,5(10)-triene-16β-carbonitrile, 6347
3,3,5-trichloro-7,7-dimethyl-oxocan-2-one, 12415
[*N*-(trifluoromethylsulfonyl)arenesulfinylimino]-*N'*-(trifluoromethylsulfonyl) amide, 6891
N-(trifluoromethylsulfonyl)arenesulfonimidoyl amide, 6891
variolin A and B and *N*(3')-methyl tetrahydrovariolin B from Antarctic sponge *Kirkpatrickia varialosa*, 3987, 3993
withajardin C, 1217

X-ray crystallography
detection and characterisation of polymorphic modifications of anxiolytic drug ABECARNIL (isopropyl 6-benzyloxy-4-methoxymethyl-β-carboline-3-carboxylate), 13125
methoxy group effect on geometry of the benzene ring; molecular structure of 4-(4-methoxyphenyl)-2,6-diphenylpyridine and 1-methyl-4-(4-methoxyphenyl)-2,6-diphenylpyridinium perchlorate, 13155
multiscattering X-ray measurements for absolute configuration of dinaphth[2,1-*c*:1',2'-*e*]oxepin-3-(5*H*)-one, 2831
short intermolecular S...S contacts in a reaction product from the cyclic sulfate ester of dimethyl L-tartrate and 2-thioxo-1,3-dithiole-4,5-dithiolate, 11205
solid-state photochemistry of the mixed crystals between benzoquinones and polymethylbenzenes, 13617
X-ray powder diffraction for β-cyclodextrin chalcone complexes, 7903
X-ray powder diffraction of patterns of coumarin encapsulated in β-cyclodextrin, 12979

Xanthenes
oxidation to xanthones under $GoAgg^{IV}$ and $GoAgg^{V}$ conditions, 1011

Xanthones
2-azaxanthones by [4+2]cycloaddition of 2-alkyl-3-iminomethylchromones with *N*-phenylmaleimide, 4905
(±)-cervinomycins A1 and A2, xanthone antibiotics from *Streptomyces cervinus*, total synth, 11729
morellin, synth of 5,5-dimethyl-7-methoxy-4-oxatricyclo[4.3.1.$0^{3,7}$]decan-2-one, the heterocyclic ring system of morellin, 2599

Ylids
1-alkoxycarbonylalkylidenetriphenylarsonium ylids, prep and reactions of, 13765
azomethine ylid formation from the reactions of α-amino acids and esters with alloxan (Strecker degradation) and 1-phenyl-3-methylpyrazolin-4,5-dione, 895
azomethine ylids, benzotriazolylmethylaminosilanes as azomethine ylid equivalents, cycloadditions with dipolarophiles to give pyrrolidines or 2,5-dihydropyrroles, 12571
azomethine ylids, decarboxylative three carbon ring expansion of cyclic secondary α-amino acids *via* − formation, 5067
azomethine ylids generated from 2-(t-butyl)-3-methylimidazolidin-4-one, 1,3-

cycloaddition to activated alkenes, 189
benz[*de*]isoquinolinium-1-ide by tautomerisation of 1*H*-benz[*de*]isoquinoline, 7495
carbonyl – formed from transition metal-catalysed decomposition of diazo(trialkylsilyl)-acetates, 7435
(*E*)-2-oxoindolin-3-ylidene ketones, isomerisation to (*Z*)-oxoindolin-3-ylidene ketones, 10955
phenyliodoniophenolates from 1,3-dihydroxybenzene derivs, cyclisation and rearrangements of, 11541
phosphonium ylids obtained by the reaction of 3-phosphorylated 1,4-dichloro-2-aza-1,3-dienes with sodium azide, structure and properties, 1889
pyrido[1,2-*b*]pyridazinium-4-olate, photolytic behaviour, 4699
(*Z*)- and (*E*)-α-ylidene-γ-butyrolactones from cross-coupling between organostannanes and organic halides, 12029

Zeolites
see Clays and earths, Supported reagents/reactions
Zinc and compds
β-amido-alkylzinc iodides and related configurationally stable zinc organometallics, synth by direct insertion of zinc dust into the corresponding alkyl iodides, 2415
cyclopentylmethylzinc derivs by intramolecular carbometalation of organozinc reagents, 11665
diethyl and bis(3-buten-1-yl)zinc addition to aldehydes, 4363
diethylzinc, enantioselective conjugate addition of – to chalcones catalysed by chiral Ni(II) aminoalcohol complexes, 4479
diethylzinc, β-hydroxysulfoximine-catalysed alkyl transfer from – to benzaldehyde, 4355
mono- and di-nuclear complexes of Zn^{2+} from bis(3, 5-diketo-1*H*-pyrazole)-[26]-crown-12, 4765
organozinc and organotin reagents in palladium-catalysed coupling reactions with 6-halopurines, 9743
silica gel supported zinc borohydride for hydration of unactivated alkenes and alkynes, 6579
zinc *meso*-tetraphenylporphyrin as shift reagent for NADH-models, 8227
zinc reductions of 1,2-dibenzocycloalkanes, effect of ring strain on, 2949
Zn/AcOH reduction of cyanoketones and *N*-cyanoamines, fate of the cyano group, 8203
Zirconium and compds
copper-catalysed conjugate additions of organozirconocenes to αβ-unsaturated carbonyl groups, synthetic and mechanistic studies, 1935
Zwitterions *see* Betaines, Ylids

Author Index 1994

Aasen A. J. see Gundersen L.-L. 9743
Abadji V. see Tius M. A. 2671
Abate D. see Dagne E. 5615
Abbas A. A. see Ibrahim Y. A. 11489
Abdel Wahab A.-M. A. see Schank K. 3721
Abdon R. L. II see Coppola B. P. 93
Abdou W. M. Elkhoshnieh Y. O. and Sidky M. M. Photochemical reactions of bianthrone and related substances 3595
Abouabdellah A. and Bonnet-Delpon D. Tandem carbonyl ene cyclization–cycloalkylation: a route to trifluoromethyl diterpenoids 11921
Abouzeid M. A. see Evidente A. 10371
Abrahams I. Motevalli M. Robinson A. J. and Wyatt P. B. Addition to activated imines of enolates from chiral *N*-acyloxazolidinones 12755
Abramova T. V. see Balbi A. 4009
Abramson S. see Senderowitz H. 9691
Acerete C. Bueno J. M. Campayo L. Navarro P. Rodriguez-Franco M. I. and Samat A. Formation of mono- and di-nuclear complexes of Zn^{2+} from a 26 membered tetraester crown of 3,5-disubstitute pyrazole able to act as neutral and dianionic ligand 4765
Achari B. see Maity S. K. 6965
Achari B. see Pakrashi S. C. 12009
Achmatowicz O. see Szechner B. 7611
Ács M. see Kozma D. 6907
Adam G. see Le thi Quyen 10923
Adam S. Stereospecific synthesis of a quinuclidinyl analogue of mefloquine—IV 3327
Adam W. Balci M. Çakmak O. Peters K. Saha-Möller C. R. and Schulz M. Photooxygenation of tetramethoxybenzobarrelene: synthesis and thermal decomposition of bisdioxetane and endoperoxide 9009
Adam W. Golsch D. Hadjiarapoglou L. Lévai A. Nemes C. and Patonay T. Dioxirane oxidation of (*Z*)-1-thioaurones, (*E*)-3-arylidene-1-thiochroman-4-ones and (*E*)-3-arylidene-1-thioflavan-4-ones 13113
Adam W. Mitchell C. M. and Saha-Möller C. R. Chemoselective methyltrioxorhenium(VII)-catalyzed sulfoxidations with hydrogen peroxide 13121
Adam W. and Sauter M. Generation of 1,2-dioxetane decomposition products in the oxidation of 3-phenyl-2-methylbenzofuran epoxide by dimethyldioxirane and the oxodiperoxomolybdenum complex 8393
Adam W. and Sauter M. Rearrangement of 2,3-disubstituted benzofuran epoxides prepared by dimethyldioxirane oxidation 11441
Adamczeski M. see Crews P. 13567
Adlington R. M. see Baldwin J. E. 5049
Adlington R. M. see Baldwin J. E. 12015
Adorni Fontana E. see Bellina F. 5189
Afonso C. M. Barros M. T. Godinho L. S. and Maycock C. D. The mechanism of the Mitsunobu azide modification and the effect of additives on the rate of hydroxyl group activation 9671
Agback P. see Rousse B. 1777
Agback P. see Rousse B. 8711
Ager D. J. see McIntosh J. M. 1967
Ager D. J. Froen D. E. Klix R. C. Zhi B. McIntosh J. M. and Thangarasa R. Studies on the alkylation of dipeptide substrates 1975
Ageta H. see Chakravarty A. K. 2865
Agrofoglio L. Suhas E. Farese A. Condom R. Challand S. R. Earl R. A. and Guedj R. Synthesis of carbocyclic nucleosides 10611
Aguilar F. J. see Batra M. S. 8169
Aguilar J. M. see Macías F. A. 5439
Ahmad S. see Atta-ur-Rahman 12109
Aihara T. see Saito N. 3915
Akam T. M. see Ayafor J. F. 9343
Akao R. see Kuroki Y. 1063
Akhmedov I. M. Peynircioglu B. Mamedov E. G. Tanyeli C. and Demir A. S. Hexachlorocyclopentadiene in Diels–Alder asymmetric reaction 2099
Akiba T. see Tamura O. 3889
Akiba T. Tamura O. Hashimoto M. Kobayashi Y. Katoh T. Nakatani K. Kamada M. Hayakawa I. and Terashima S. Synthetic studies on the key component of the new generation of quinolonecarboxylic acid, DU-6859—II. Asymmetric synthesis of (1*R*,2*S*)-2-fluorocyclopropylamine 3905
Akimoto K. see Natori T. 2771
Akssira M. Boumzebra M. Kasmi H. Dahdouh A. Roumestant M.-L. and Viallefont Ph. New routes to 1,4-benzodiazepin-2,5-diones 9051

Alajarin R. see Pastor A. 8085
Alassar A.-Z. A. see Erian A. W. 1877
Alauddin M. M. and Conti P. S. Selective alkylation of pyrimidyl dianions—II. Synthesis, characterization, and comparative reactivity of 3',5'-O-bis- tetrahydropyranyl, trimethylsilyl and *tert*-butyldimethylsilyl derivatives of 5-bromo-2'-deoxyuridine 1699
Alazard J.-P. Terrier C. Mary A. et Thal C. Synthèse et réactivité d'oxazolopipéridines et d'oxazolopipéridones 6287
Albeck A. and Persky R. Stereocontrolled synthesis of *erythro* N-protected α-amino epoxides and peptidyl epoxides 6333
Albert A. see Marco J. L. 3509
Albini A. see Fagnoni M. 6401
Albini A. see Freccero M. 2115
Albini A. Mella M. and Freccero M. A new method in radical chemistry: generation of radicals by photoinduced electron transfer and fragmentation of the radical cation 575
Albrecht K. Reiser O. Weber M. Knieriem B. and de Meijere A. Palladium-catalyzed domino coupling reactions of aryl halides with norbornene and norbornene derivatives—a simple route to polycyclic aromatic compounds 383
Albrecht P. see Lichtfouse E. 1731
Albrecht P. see Schaeffer P. 12633
Albrizio S. Ciminiello P. Fattorusso E. Magno S. and Pansini M. Chemistry of Verongida sponges—I. Constituents of the Caribbean sponge *Pseudoceratina crassa* 783
Alcaide B. Biurrun C. and Plumet J. The uncatalyzed alcoholysis of furyl-2-oxirane. A mechanistic study based on kinetic data 5555
Alcántara J. see Molina P. 5027
Alcaraz C. Fernández Mª D. de Frutos Mª P. Marco J. L. Bernabé M. Foces-Foces C. and Cano F. H. Asymmetric syntheses of 1-amino-2-phenyl(alkyl)cyclopropanecarboxylic acids by diastereoselective cyclopropanation of highly functionalized monochiral olefines 12443
Al Daher S. see Lundt I. 7513
Aleksandrov A. M. Bourne S. A. Krawiec M. Pehk T. J. Petrenko A. E. and Watson W. H. New route to 4,4,6,7-tetrasubstituted pentacyclo-[6.3.0.0^{2,6}.0^{3,10}.0^{5,9}]-undecanes 8597
Algharib M. S. see Farag A. M. 5091
Ali B. A. see Hassan A. A. 9997
Ali H. and van Lier J. E. Synthesis of β-substituted porphyrins using palladium catalysed reactions 11933
Ali S. S. see Atta-ur-Rahman 12109
Alkorta I. see Escolástico C. 12489
Allemann S. and Vogel P. Unexpected selectivity between pinacolic rearrangement and intramolecular displacement in the acid-promoted epoxide ring opening of 6-*exo*-cyano-3,8-dioxabicyclo[3.2.1.0^{2,4}]oct-6-*endo*-yl esters 2469
Allen J. V. Dawson G. J. Frost C. G. Williams J. M. J. and Coote S. J. Preparation of novel sulfur and phosphorus containing oxazolines as ligands for asymmetric catalysis 799
Allen T. M. see Kong F. 6137
Allen Gnanaraj G. Rajagopal S. and Srinivasan C. Photoredox reactions of polypyridyl chromium(III) complexes with arylthioacetic acids in acetonitrile and aqueous media 9447
Almena J. Foubelo F. and Yus M. 4,4'-Di-*tert*-butylbiphenyl-catalysed reductive opening of azetidines with lithium: a direct preparation of 3,*N*-dilithioalkylamines 5775
Almendros P. see Molina P. 2241
Alonso D. A. Nájera C. and Sansano J. M. Tosylated lithium 2-(lithiomethyl)-2-propen-1-olate: a γ-alkoxide allyl sulfone anion in organic synthesis 6603
Alonso M. S. see Collado I. G. 10531
Alonso M. S. see Collado I. G. 6433
Alper H. see Krasik P. 4347
Alt M. and Maas G. Transition-metal-catalyzed decomposition of diazo(trialkylsilyl)acetates: intermolecular formation and trapping of carbonyl ylides 7435
Altarejos J. see Barrero A. F. 6653
Altava B. Burguete M. I. Luis S. V. and Mayoral J. A. Functionalization of polystyrene resins with chiral fragments derived from tartaric acid 7535
Alvarez M. see Estévez C. 7879
Alvarez-Builla J. see Carceller R. 4995
Alvarez-Builla J. see Cuadro A. M. 10037
Alvarez-Builla J. see Pastor A. 8085
Alvarez-Manzaneda E. J. see Barrero A. F. 13239
Alvarez-Manzaneda E. J. see Barrero A. F. 6653
Aly M. F. El-Nagger G. M. El-Emary T. I. Grigg R. Metwally S. A. M. and Sivagnanam S. X=Y–ZH Compounds as potential 1,3-dipoles—XLI. Azomethine ylide formation from the reactions of α-amino acids and esters with alloxan (Strecker degradation) and with 1-phenyl-3-methyl-pyrazolin-4,5-dione 895
Aly M. F. Younes M. I. and Metwally S. A. M. Non-decarboxylative 1,3-dipolar cycloadditions of imines of α-amino acids as a route to proline derivatives 3159
Ammon H. L. see Marchand A. P. 1687
Amputch M. A. Matamoros R. and Little R. D. Asymmetric induction in the Michael initiated ring closure reaction 5591
An T. D. see Bauer P. J. 1707
Anders E. see Katritzky A. R. 6005
Andersen K. E. Begtrup M. Chorghade M. S. Lee E. C. Lau J. Lundt B. F. Petersen H. Sørensen P. O. and Thøgersen H. The synthesis of novel GABA uptake inhibitors—II. Synthesis of 5-hydroxy-tiagabine, a human metabolite of the GABA reuptake inhibitor tiagabine 8699
Andersen R. J. see Kong F. 6137
Andersson C. see Engman L. 2929
Andersson C.-M. see Engman L. 2929
Andersson C.-M. see Larhed M. 285
Andersson P. G. see Tanner D. 9135
Andersson P. G. Nilsson Y. I. M. and Bäckvall J.-E.

Palladium-catalyzed oxaspirocyclizations 559
Ando K. Seo W. Tomioka K. and Koga K. Stereoselective reactions—XXIV. Chlorotrimethylsilane promoted asymmetric Michael reaction of chiral lithio-enamines derived from α-alkyl β-keto esters 13081
Andrei G. see Melguizo M. 13511
Andrejevic V. see Dabovic M. 1833
Andreotti A. H. see Walker S. L. 1351
Andrieux C. P. Batlle A. Espín M. Gallardo I. Jiang Z. and Marquet J. Mechanistic studies on the electrochemical reductive coupling of some polyhalogenonitrobenzenes. A new example of a radical anion dimerization 6913
Angelova O. see Georgieva A. 9399
Anioł M. see Nobilec E. 10339
Anke H. see Stadler M. 12649
Annunziata R. Benaglia M. Cinquini M. Cozzi F. Ponzini F. and Raimondi L. Synthesis of β-lactams by condensation of titanium enolates of 2-pyridylthioesters with imines. Influence of the imine structure on the *trans*/*cis* stereoselectivity 2939
Annunziata R. Benaglia M. Cinquini M. Cozzi F. and Raimondi L. Synthesis of β-lactams by condensation of the tin enolates of 2-pyridylthioesters with imines. A comparison between titanium and tin enolates 5821
Annunziata R. Benaglia M. Cinquini M. Cozzi F. and Raimondi L. Stereoselective synthesis of β-lactams by condensation of titanium enolates of 2-pyridyl thioesters with imines bearing a chiral auxiliary 9471
Anstine D. T. see Nogales D. F. 8579
Anstine D. T. see Hwang K.-O. 9919
Anthonsen H. W. see Waagen V. 10055
Anthonsen T. see Waagen V. 10055
Antolic S. see Gelo-Pujic M. 13753
Antoniotti P. see Canepa C. 8073
Anulewicz R. see Krygowski T. M. 13155
Anzai J. and Osa T. Photosensitive artificial membranes based on azobenzene and spirobenzopyran derivatives 4039
Aoki T. see Eto M. 13395
Aoyagi Y. Inariyama T. Arai Y. Tsuchida S. Matuda Y. Kobayashi H. Ohta A. Kurihara T. and Fujihira S. First total synthesis of (±)-oxerine 13575
Aoyama T. see Matsumoto T. 9775
Aoyama T. see Matsumoto T. 9781
Aparicio D. see Palacios F. 12727
Arai K. see Katoh T. 6221
Arai K. see Katoh T. 6239
Arai Y. see Aoyagi Y. 13575
Araki M. see Kobayashi S. 11623
Aramata A. see Nishide K. 8337
Arcadi A. Cacchi S. Carnicelli V. and Marinelli F. 2-Substituted-3-acylindoles through the palladium-catalysed carbonylative cyclization of 2-alkynyltrifluoroacetanilides with aryl halides and vinyl triflates 437
Archbold R. see Luis J. G. 1217
Ardill H. Grigg R. Malone J. F. Sridharan V. and Thomas W. A. X=Y–ZH Systems as potential 1,3-dipoles—XLII. Decarboxylative three carbon ring expansion of cyclic secondary α-amino acids via azomethine ylide formation 5067
Argade N. P. see Hazra B. G. 2523
Arienti A. see Sartori G. 10587
Arihara S. see Shoji N. 4973
Armesto X. L. Canle L. M. García M. V. Losada M. Rodríguez P. and Santaballa J. A. Alkoxide-promoted decomposition of N-halo-α-amino acids in aqueous medium 2265
Armesto X. L. Canle L. M. Gamper A. M. Losada M. and Santaballa J. A. Acid–base equilibria and decomposition of secondary (N–Cl)-α-amino acids 10509
Arnold N. A. see Rodríguez B. 2289
Arnone A. Bravo P. Frigerio M. Salani G. and Viani F. Synthetically useful C-4 fluorinated building blocks bearing a quaternary stereocentre 13485
Arnone A. Bravo P. Frigerio M. Viani F. Cavicchio G. and Crucianelli M. On the synthesis of optically pure monofluorocyclohexanol derivatives by the fluorinated sulfoxide chiron route 12361
Arnouts E. G. see Dols P. P. M. A. 3473
Arraez J. D. see Fraga B. M. 12643
Arriortua M. I. see González-Cameno A. M. 10971
Arseniyadis S. Rodriguez R. Muñoz Dorado M. Brondi Alves R. Ouazzani J. and Ourisson G. Chemobiological transformations of octalone and hydrindenone derivatives 8399
Arshava B. M. see Raifeld Y. E. 8603
Arumugam S. see Kasturi T. R. 13277
Árvai G. see Kádas I. 2895
Asai N. see Sata N. 1105
Asakawa N. see Satoh T. 11839
Asaoka M. Obuchi K. and Takei H. An enantioselective route to (–)-$\Delta^{9(12)}$-capnellene employing silyl group directed stereo control 655
Asensio J. L. López R. Fernández-Mayoralas A. and Jiménez-Barbero J. Conformational studies on β-galactopyranosyl-(1→3) and (1→4)-xylopyranosides by NMR, molecular mechanics, molecular dynamics, and semiempirical calculations 6417
Ashby E. C. see Doctorovich F. 5945
Ashek L. see Lolkema L. D. M. 7129
Ashizawa T. see Katoh T. 6259
Asmellash S. see Dagne E. 5615
Asztemborska M. see Dodziuk H. 3619
Atanes N. Pérez S. Guitián E. Castedo L. and Saá J. M. Synthesis of 7-substituted dehydronoraporphines, with some biogenetic considerations 11257
Atasoy B. Bayramoglu F. and Hökelek T. A concise synthesis of the 2,3-dimethylene-1,4-methano-1,2,3,4-tetrahydronaphthalene and its reaction with singlet oxygen 5753
Atkins E. F. Dabbs S. Guy R. G. Mahomed A. A. and Mountford P. Pseudohalogen chemistry—XI. Some aspects of the chemistry of α-thiocyanato-β-dicarbonyl compounds 7253

Atrees S. S. see Shabana R. 6975
Atta-ur-Rahman Ahmad S. Ali S. S. Shah Z. Choudhary M. I. and Clardy J. New furanoid diterpenoidal constituents of *Tinospora malabarica* 12109
Attygalle A. B. see McCormick K. D. 2365
Audrain H. Skrydstrup T. Ulibarri G. Riche C. Chiaroni A. and Grierson D. S. Application and mechanistic studies of the [2,3]-Wittig rearrangement: an approach to the bicyclic core structure of the 'enediyne' antitumor antibiotics calicheamicin γ_1^I and esperamicin-A_1 1469
Augé J. see Lubineau A. 10265
Augusti R. and Kascheres C. Bicyclic triazoles from a diazo transfer reaction between cyclic enaminones and 5,7-dinitro-3-diazo-1,3-dihydro-2*H*-indol-2-one 6723
Augustyns K. Rozenski J. Van Aerschot A. Busson R. Claes P. and Herdewijn P. Synthesis of a new branched chain hexopyranosyl nucleoside: 1-[2',3'-dideoxy-3'-C-(hydroxymethyl)-α-D-*erythro*-pentopyranosyl]-thymine 1189
Aurell M. J. Gaviña P. and Mestres R. Dienediolates of unsaturated carboxylic acids in synthesis. Synthesis of cyclohexenones and polycyclic ketones by tandem Michael–Dieckmann decarboxylative annulation of unsaturated carboxylic acids 2571
Aurell Mª J. Gil S. Mestres R. Parra M. and Tortajada A. ^{13}C NMR Studies of dianions of unsaturated carboxylic acids 5109
Auricchio S. Bini A. Pastormerlo E. Ricca A. and Truscello A. M. Nitrile oxide–BF_3 complex as electrophilic moiety towards aromatic systems: stereospecific synthesis of oximes 7589
Aurich H. G. Frenzen G. and Rohr M. G. Formation of cycloadducts with *trans*-configurated ester groups from nitrones and dimethyl maleate 7417
Aurich H. G. and Quintero J.-L. R. Highly diastereoselective formation of bicyclic compounds by intramolecular cycloaddition of chiral thiaalkenyl nitrones 3929
Aurich H. G. and Quintero J.-L. R. Effects of configuration and N-substitution on the formation of β-lactams from bicyclic cyano-substituted isoxazolidines 3943
Austin L. R. see Söderberg B. C. 61
Auzeil N. see Largeron M. 6307
Avalos M. Babiano R. Cintas P. Jiménez J. L. Palacios J. C. and Valencia C. Condensation of 2-amino-2-deoxysugars with isothiocyanates. Synthesis of *cis*-1,2-fused glycopyrano heterocycles 3273
Avendaño C. see Marcos A. 12941
Avendaño C. see Ocaña B. 9505
Avendaño C. see Pérez J. M. 7923
Avendaño C. see Villacampa M. 10047
Avenoza A. Busto J. H. Cativiela C. and Peregrina J. M. A new efficient synthesis of 2-phenyl-4-oxo-1-aminocyclo-hexanecarboxylic acids 12989
Avenoza A. Cativiela C. and Peregrina J. M. Synthesis of γ-hydroxy-α-amino acids by directed hydroxylation via a dihydro-1,3-oxazine intermediate 10021
Avery M. A. Gao F. Chong W. K. M. Hendrickson T. F. Inman W. D. and Crews P. Synthesis, conformational analysis, and antimalarial activity of tricyclic analogs of artemisinin 957
Ayafor J. F. Kimbu S. F. Ngadjui B. T. Akam T. M. Dongo E. Sondengam B. L. Connolly J. D. and Rycroft D. S. Limonoids from *Carapa grandiflora* (Meliaceae) 9343
Ayyangar N. R. see Sonawane H. R. 1243
Azhayev A. see Hovinen J. 7203
Baba Y. Sakamoto T. Soejima S. and Kanematsu K. Alternative synthetic approaches to (±)-euryfuran via the furan ring transfer reaction 5645
Baban J. A. see Elgendy S. 3803
Baban J. A. see Green D. 5099
Babiano R. see Avalos M. 3273
Babin P. see Bennetau B. 1179
Bach K. K. El-Seedi H. R. Jensen H. M. Nielsen H. B. Thomsen I. and Torssell K. B. G. 1,3-Dipolar cycloadditions of ethoxycarbonyl-nitrile benzylimine, EtOOC C≡N⁺–N⁻$CH_2C_6H_5$, and synthesis of β-amino acids. Synthesis and reactions of ethyl 2-chloro-2-ethoxyacetate and 2-chloro-2-ethoxyacetyl chloride 7543
Bach T. and Kather K. The β-silicon effect as a control element for the regioselective ring opening of oxetanes 12319
Bachki A. Foubelo F. and Yus M. Aromatic iodination with the I_2–HgX_2 combination 5139
Backenstrass F. see Tschamber T. 1135
Bäckvall J.-E. see Andersson P. G. 559
Bacqué E. see Largeron M. 6307
Badía D. see González-Cameno A. M. 10971
Bagatti M. see Rastelli A. 5561
Bagryanskaya I. Yu. see Tkachev A. V. 11459
Bahule B. B. see Hazra B. G. 2523
Bai Y. see Joshi B. S. 12283
Bailey W. F. and Gavaskar K. V. Anionic cyclization of olefinic alkyllithiums: ring closure of terminally substituted 5-hexenyllithiums 5957
Bajgrowicz J. A. and Petrzilka M. 3,3-Dimethyl-7-methylenecycloocta-1,5-dione, a versatile building block for the preparation of substituted cyclooctadienones and δ-valerolactones 7461
Bak T. see Krygowski T. M. 13155
Bakkestuen A. K. see Gundersen L.-L. 9743
Balasubrahmanyam S. N. Jeyashri B. and Narayanan Namboothiri I. N. Selectivities in the formation of pyridines and pyrimidines by ammonia-induced cyclocondensations of vinamidiniums 8127
Balasubramanian K. K. see Dhanalekshmi S. 6387
Balbi A. Sottofattori E. Grandi T. Mazzei M. Abramova T. V. Lokhov S. G. and Lebedev A. V. Synthesis and complementary complex formation properties of oligonucleotides covalently linked to new stabilizing agents 4009
Balci M. see Adam W. 9009
Balcı M. see Dastan A. 10555
Baldwin J. E. see Lawlor E. J. 8737

Baldwin J. E. Adlington R. M. Bebbington D. and Russell A. T.
Asymmetric total synthesis of the individual diastereoisomers of hypoglycin A 12015
Baldwin J. E. Adlington R. M. and Mellor L. C.
Synthesis of chiral isoxazolidin-5-ones and their applications to the synthesis of β-amino-alanines and β-(*N*-hydroxyamino)-alanines 5049
Baldwin J. E. MacKenzie Turner S. C. and Moloney M. G.
The synthesis of substituted pyrrolidines by a samarium(II) iodide-mediated ring closure—I 9411
Baldwin J. E. MacKenzie Turner S. C. and Moloney M. G.
The synthesis of substituted pyrrolidines by a samarium(II) iodide-mediated ring closure—II 9425
Balenkova E. S. see Nenajdenko V. G. 775
Balenkova E. S. see Nenajdenko V. G. 11023
Balenkova E. S. see Nenajdenko V. G. 12407
Ball R. G. see Boudreault N. 7947
Balme G. and Bouyssi D.
Total synthesis of the triquinane marine sesquiterpene (±)$\Delta^{9(12)}$ capnellene using a palladium-catalyzed bis-cyclization step 403
Bałoniak S. see Katrusiak A. 12933
Balsamini C. Bedini A. Galarini R. Spadoni G. Tarzia G. and Hamdan M.
Reactions of 3-carbomethoxy-2-aza-1,3-butadiene derivatives with dienophiles 12375
Balsamini C. Bedini A. Spadoni G. Burdisso M. and Capelli A. M.
Substituent effects on 1,3-dipolar cycloadditions to some 1,1-diphenyl-2-aza-1,3-butadiene derivatives 3773
Balslev H. and Lund H.
Electrochemical investigation of the reaction between sodium benzene-sulfinate and *p*-halonitrobenzenes 7889
Balzano F. see Lardicci L. 12953
Balzarini J. see Velázquez S. 11013
Banaszek A. see Karpiesiuk W. 2965
Bandarage U. K. Simpson J. Smith R. A. J. and Weavers R. T.
Conformational polymorphism and thermorearrangement of 2,2'-bis-O-(*N*,*N*-dimethyl-thiocarbamato)-1,1'-binaphthalene. A facile synthesis of 1,1'-binaphthalene-2,2'-dithiol 3463
Banerjee A. K. see Maity S. K. 6965
Banerji A. and Maiti S.
Studies on single-electron transfer reagents—IV. Reaction of nitrogen heterocycles with sodium naphthalenide 9079
Banfi L. see Guanti G. 2219
Banfi L. see Guanti G. 11945
Banfi L. Cascio G. Ghiron C. Guanti G. Manghisi E. Narisano E. and Riva R.
Microbiological enantioselective synthesis of (*S*) and (*R*) 4-(*p*-anisyloxy)-3-hydroxybutyrates as new chiral building blocks for the synthesis of β-lactam antibiotics 11983
Banfi L. Cascio G. Guanti G. Manghisi E. Narisano E. and Riva R.
Enantiospecific and diastereoselective synthesis of *cis* monobactams through electrophilic amination of chiral 3-hydroxyesters 11967
Banfi S. Montanari F. Pozzi G. and Quici S.
Dimeric Mn(III)-tetraarylporphyrins as catalysts for H_2O_2-promoted olefin epoxidation 9025
Bansal R. K. Karaghiosoff K. and Schmidpeter A.
Anellated heterophospholes 7675
Barani M. Fioravanti S. Loreto M. A. Pellacani L. and Tardella P. A.
Improved amination by ethyl *N*-[[(4-nitrophenyl)sulphonyl]-oxy}carbamate in the presence of inorganic oxides or carbonates 3829
Barani M. Fioravanti S. Pellacani L. and Tardella P. A.
Cs_2CO_3 or CaO as promoters of ethyl *N*-{[(4-methylphenyl)-sulphonyl]oxy}carbamate in amination reactions 11235
Barbarella G. and Zambianchi M.
Polyhydroxyl oligothiophenes—I. Regioselective synthesis of 3,4'- and 3,3'-di(2-hydroxy-ethyl)-2,2'-bithiophene via palladium catalyzed coupling of thienylstannanes with thienylbromides 11249
Barbeaux P. see Krief A. 7177
Barcina J. O. see Martínez A. G. 13231
Barco A. Benetti S. Bianchi A. Casolari A. Pollini G. P. Romagnoli R. Spalluto G. and Zanirato V.
Enantioselective synthesis of the hexahydronaphthalene nucleus of (–)-compactin from ethyl (1*R*,2*S*)-2-methyl-4-oxocyclohexanecarboxylate and 2-(3-nitropropyl)-1,3-dioxolane as four carbon bifunctional annelating agent 11743
Barco A. Benetti S. De Risi C. Pollini G. P. Romagnoli R. Spalluto G. and Zanirato V.
Enantioselective synthesis of (–)-meroquinene through tandem Michael reaction methodology 2583
Barco A. Benetti S. De Risi C. Pollini G. P. Romagnoli R. and Zanirato V.
Synthesis of melodienone and 7-hydroxy-6-hydromelodi-enone, two heptenes from *Melodorum fruticosum* 10491
Barcock R. A. Chadwick D. J. Storr R. C. Fuller L. S. and Young J. H.
Synthesis of some novel imidate derivatives of thiophene and furan: investigations of their metallation properties and some synthetic applications 4149
Baret P. Béguin C. Gaude D. Gellon G. Mourral C. Pierre J.-L. Serratrice G. and Favier A.
Tripodal ligands possessing six convergent hydroxyl groups. A novel family of iron sequestering agents based on *o,o'*-dihydroxybiphenyl subunits 2077
Barillier D. Levillain J. and Vazeux M.
Halides-based electrophiles mediated epoxide ring-opening reactions of α,β-epoxysulfoxides in C_6-series: deoxygenation versus dehydration and an overall 1,2-keto transposition 5413
Barnhart R. W. Wang X. Noheda P. Bergens S. H. Whelan J. and Bosnich B.
Asymmetric catalysis. Asymmetric catalytic intramolecular hydrosilation and hydroacylation 4335
Barr S. A. Boyd D. R. Sharma N. D. Evans T. A. Malone J. F. and Mehta V. D.
Resolution of prenyl bromohydrin esters and derivatives: synthesis of the quinoline alkaloid (+)-(*R*)- and (–)-(*S*)-lunacridine 11219

Barrero A. F. Alvarez-Manzaneda E. J. and Palomino P. L.
Synthesis of (±)-karahana ether and karahanaenone by selective cyclization of 6,7-epoxygeranyl acetate 13239
Barrero A. F. Sánchez J. F. Alvarez-Manzaneda E. J. Altarejos J. Muñoz M. and Haïdour A.
Synthesis of nor-ambreinolide from (+)-*cis*-abienol 6653
Barros M. T. see Afonso C. M. 9671
Barrot M. Fabriás G. and Camps F.
Synthesis of [16,16,16-$^2H_3$] 11-hexadecynoic acid and [15,15,16,16,16-$^2H_5$] (*Z,Z*)-11,13-hexadecadienoic acid and their use as tracers in a key step of the sex pheromone biosynthesis of the processionary moth 9789
Barrow C. J. see Musza L. L. 11369
Bartók M. see Bucsi I. 8195
Bartoli G. Bosco M. Dalpozzo R. De Nino A. and Palmieri G.
The reaction of the dianion of β-enaminoketones with electrophiles—VI. Synthesis of γ- and ε-nitro-β-enaminoketones 9831
Bartoli G. Bosco M. Lunazzi L. and Macciantelli D.
Conformational studies by dynamic NMR—LI. Gear effect in substituted pyridones 2561
Barton D. H. R. Bévière S. D. and Hill D. R.
The functionalization of saturated hydrocarbons—XXIX. Application of *tert*-butyl hydroperoxide and dioxygen using soluble Fe(III) and Cu(II) chelates 2665
Barton D. H. R. Parekh S. I. Tajbakhsh M. Theodorakis E. A. and Tse C.-L.
A convenient and high yielding procedure for the preparation of isoselenocyanates. Synthesis and reactivity of *O*-alkyl-selenocarbamates 639
Barton D. H. R. and Wang T.-L.
The selective functionalization of saturated hydrocarbons—XXVIII. The activation of benzylic methylene groups under GoAgg^{IV} and GoAgg^{V} conditions 1011
Barton D. H. R. Bévière S. D. and Chavasiri W.
The functionalization of saturated hydrocarbons—XXV. Ionic substitution reactions in GoAgg^{IV} chemistry: the formation of carbon–halogen bonds 31
Barton D. H. R. and Chavasiri W.
The functionalization of saturated hydrocarbons—XXIV. The use of *tert*-butyl hydroperoxide: GoAgg^{IV} and GoAgg^{V} 19
Barton D. H. R. and Chavasiri W.
The functionalization of saturated hydrocarbons—XXVI. Ionic substitution reactions in GoAgg^{IV} chemistry: the construction of C–N, C–S and C–C bonds 47
Barua T. K. see Waagen V. 10055
Basa S. C. see Pakrashi S. C. 12009
Basabe P. see Urones J. G. 10791
Basabe P. see Urones J. G. 10995
Basavaiah D. and Raju S. B.
Bovine liver acetone powder (BLAP) catalyzed synthesis of chiral C-8 allyl alcohols: an application of substrate specificity approach 4137
Basavaiah D. and Rama Krishna P.
Pig liver acetone powder (PLAP) as biocatalyst: enantioselective synthesis of *trans*-2-alkoxycyclohexan-1-ols 10521
Bassa J. Planas M. Segura C. Ventura M. and Ortuño R. M.
Synthesis of 5,5-disubstituted 2(3*H*)-dihydrofuranones containing side-chain carbonyl functions, and some derivatives 8143
Batchelor M. J. Gillespie R. J. Golec J. M. C. Hedgecock C. J. R. Jones S. D. and Murdoch R.
Total syntheses of close analogues of the immunosuppressant FK506 809
Batlle A. see Andrieux C. P. 6913
Bátori S. Döpp D. and Messmer A.
Photoinduced ring transformation of pyrido[1,2-*b*]pyridazinium-4-olate 4699
Batra M. S. Aguilar F. J. and Brunet E.
On the diastereoselectivity of cyanide addition to β-hydroxyketones: one-pot synthesis of *syn* β-hydroxycyanohydrins and *anti* 2,4-dihydroxyamides 8169
Bats J. W. see Rosmanitz P. 5719
Bauchat P. Le Bras N. Rigal L. and Foucaud A.
Synthesis and structural features of new [5,7] orthocyclophanes, [7,7] cyclophanes and corresponding macrobicyclic cryptophanes 7815
Bauer P. J. Exner O. Ruzziconi R. An T. D. Tarchini C. and Schlosser M.
Identification of stereoisomers based on dielectric studies: dipole moments of chloroalkenes and chlorocumulenes 1707
Baumann K. see Zimmer R. 13655
Bayly C. see Boudreault N. 7947
Bayramoglu F. see Atasoy B. 5753
Bayston D. J. see Markó I. E. 7141
Beak P. and Liu C.
Evidence for bromine–lithium exchange in a local high concentration gradient 5999
Bebbington D. see Baldwin J. E. 12015
Beccalli E. M. Marchesini A. and Pilati T.
2-Ethoxycarbonyloxy-3-ethynylindoles from indol-2(3*H*)-ones 12697
Beck A. K. see Seebach D. 4363
Beck G. Jendralla H. and Kammermeier B.
Stereoselective synthesis of 2(*S*)-(1,1-dimethylethyl-sulfonylmethyl)-3-(1-naphthyl)-propionic acid, building block for protease inhibitors via asymmetric hydrogenation 4691
Beck I. see Tournaire C. 9303
Becker J. Y. and Shakkour E.
Electrochemical oxidation of dihydroindoloquinazoline and dihydroquinazoline derivatives 12773
Becker S. see Fort Y. 11893
Bedini A. see Balsamini C. 12375
Bedini A. see Balsamini C. 3773
Beer P. D. Chen Z. and Gale P. A.
Diester–calix[4]arenedi-quinone complexation and electrochemical recognition of group 1 and 2, ammonium and alkyl ammonium guest cations 931
Begtrup M. see Andersen K. E. 8699
Béguin C. see Baret P. 2077
Bell D. Crowe E. A. Dixon N. J. Geen G. R. Mann I. S. and Shipton M. R.
Stereoselectivity in the

Peterson reaction—application to the synthesis of BRL 49467 6643
Bellina F. Carpita A. Adorni Fontana E. and Rossi R. Regio- and stereoselective synthesis of (*E*)-2-methyl-1-alkenyltrimethylstannanes from 1-alkynes 5189
Bellina F. Carpita A. De Santis M. and Rossi R. Synthesis of 2-tributylstannyl-1-alkenes from 2-tributylstannyl-2-propen-1-yl acetate 4853
Bellina F. Carpita A. De Santis M. and Rossi R. Synthesis of variously 2-substituted alkyl (*Z*)- and (*E*)-2-alkenoates and (*Z*)- and (*E*)-α-ylidene-γ-butyrolactones via palladium-mediated cross-coupling reactions between organostannanes and organic halides 12029
Bellur N. S. see Sonawane H. R. 1243
Ben R. N. Breau L. Bensimon C. and Durst T. Unusual stereochemical results in the reaction of alpha-lithio derivatives of bicyclic sulfoxides 6061
Benaglia M. see Annunziata R. 2939
Benaglia M. see Annunziata R. 5821
Benaglia M. see Annunziata R. 9471
Benameur L. see Nebois P. 8457
Benassi R. Fiandri G. L. and Taddei F. *Ab initio* MCSCF study of the homolytic S–S bond dissociation in disulphides, thiosulphinates and α-disulphoxides 12469
Benassi R. and Taddei F. Homolytic bond-dissociation in peroxides, peroxyacids, peroxyesters and related radicals: *ab-initio* MO calculations 4795
Benati L. Capella L. Montevecchi P. C. and Spagnolo P. Reaction of 4'-nitrobenzenesulfenanilide (NBSA) with Lewis acids. A study of its application in sulfenocyclization of alkenes and alkynes 12395
Benetti S. see Barco A. 10491
Benetti S. see Barco A. 11743
Benetti S. see Barco A. 2583
Ben-Ishai D. see Rabi-Barakay A. 10771
Ben-Ishai D. see Rabi-Barakay A. 12281
Ben-Ishai D. see Sheffer-Dee-Noor S. 7009
Bennetau B. Rajarison F. Dunoguès J. et Babin P. Une voie de synthèse simple et rapide de phénols méta acylés 1179
Bennett F. Fenton G. and Knight D. W. Synthesis of conformationally restricted relatives of the mevinic acids 5147
Bensimon C. see Ben R. N. 6061
Berecibar A. see Herczegh P. 13671
Bergander K. He R. Chandrakumar N. Eppers O. and Günther H. NMR Spectroscopy of organolithium compounds—XVI. The aggregation behavior of butyllithium, phenyllithium and lithium diisopropylamide in dimethoxy- and diethoxy-methane 5861
Bergens S. H. see Barnhart R. W. 4335
Berger S. see Duddu R. 2415
Bergman J. S. Duffin H. C. and Wells C. H. Studies on 2,4,6-trinitrophenyl substituted naphthalenes—I. Synthesis of nitro- and polynitro-2-(2,4,6-trinitrophenyl)naphthalenes 11527
Bergquist P. R. see Dopeso J. 3813
Bernabé M. see Alcaraz C. 12443
Bernard J.-M. see Genêt J. P. 497
Bernardi A. see Gennari C. 8815
Bernardi A. Comotti A. Gennari C. Hewkin C. T. Goodman J. M. Schlapbach A. and Paterson I. Computer-assisted design of chiral boron enolates: the role of ate complexes in determining aldol stereoselectivity 1227
Bernardinelli G. see Tanaka J. 9989
Bernstein M. A. see Boudreault N. 7947
Bertinotti A. Carrea G. Ottolina G. and Riva S. Regioselective esterification of polyhydroxylated steroids by *Candida antarctica* lipase B 13165
Bertrand M. P. see Lesueur C. 5369
Bertucco A. Brennan J. Fachini M. Kluge S. Murphy P. J. Pasutto F. Signorini R. and Williams H. L. Michael and substitution reactions of bicyclic tetronic, tetramic and thio-tetronic esters 8237
Besançon J. see Szymoniak J. 2841
Besse P. and Veschambre H. Chemical and biological synthesis of chiral epoxides 8885
Beveridge D. L. see Langley D. R. 1379
Bévière S. D. see Barton D. H. R. 2665
Bévière S. D. see Barton D. H. R. 31
Bézard D. see Commerçon A. 10289
Bezhan I. P. see Zelenin K. N. 11447
Bezugly P. A. see Ukrainets I. V. 10331
Bhalerao U. T. Muralikrishna C. and Rani B. R. Laccase enzyme catalysed efficient synthesis of 3-substituted-1,2,4-triazolo(4,3-*b*)(4,1,2)benzothiadiazine-8-ones 4019
Bhanuprakash K. see Roy S. 1847
Bhatia B. see Maikap G. C. 9145
Bhatt M. V. and Periasamy M. Rearrangements in the cerium(IV) and manganese(III) oxidations of substituted naphthalenes and the NIH shift mechanism 3575
Bhatt V. M. see Rajeev K. G. 5425
Bhattacharya K. see Ghosh C. K. 4905
Bhattacharyya P. see Maiti A. K. 10483
Bhedi D. N. see Lal B. 9167
Bhuniya D. see Gupta A. D. 13725
Bianchi A. see Barco A. 11743
Bick S. see Jordine G. 139
Bick S. see Jordine G. 4037
Bickelhaupt F. see Kane V. V. 4575
Bielejewska A. see Dodziuk H. 3619
Bienaymé H. and Yezeguelian C. Palladium-catalysed vinylation of tertiary allylic alcohols: a new protocol for the synthesis of isoprenoid aldehydes 3389
Bienz S. see Hadj-Abo F. 8665
Bigi F. see Sartori G. 10587
Bihari M. see Kádas I. 2895
Bilia A. R. Morelli I. and Marsili A. Two glucosides from *Pyracantha coccinea* roots: a new lignan and a new chalcone 5181
Bilkis I. I. see Vaganova T. A. 10011
Bills G. F. see Schwartz R. E. 1675

Billups W. E. Haley M. M. Boese R. and Bläser D. Synthesis of the bicyclopropenyls 10693
Binder W. H. Kählig H. and Schmid W. Galactosylation by use of β-galactosidase: chemo-enzymatic syntheses of di- and trisaccharides 10407
Binder W. H. Prenner R. H. and Schmid W. Indium-mediated allylation of aldehydes: a convenient route to 2-deoxy and 2,6-dideoxy carbohydrates 749
Bini A. see Auricchio S. 7589
Birgersson C. see Tanner D. 9797
Bishop R. Craig D. C. Marougkas A. and Scudder M. L. 2,7-Dimethyltricyclo[4.3.1.1^{3,8}]undecane-*syn*-2,*syn*-7-diol as a host for volatile and odorous guest molecules 8749
Bisht K. S. see Prasad A. K. 2231
Bisht K. S. see Prasad A. K. 10579
Bitha P. see Ziegler, Jr C. B. 12085
Biurrun C. see Alcaide B. 5555
Bizot-Espiart J.-G. see Caubère C. 13433
Bjelakovic M. see Dabovic M. 1833
Black D. St. C. Bowyer M. C. Condie G. C. Craig D. C. and Kumar N. Reactions of ninhydrin with activated anilines: formation of indole derivatives 10983
Black D. St. C. Bowyer M. C. Catalano M. M. Ivory A. J. Keller P. A. Kumar N. and Nugent S. J. Substitution, oxidation and addition reactions at C-7 of activated indoles 10497
Blaney W. M. see de la Torre M. C. 13553
Blaney W. M. see Rodríguez B. 5451
Blankespoor C. L. see McCormick K. D. 2365
Blart E. see Genêt J. P. 497
Blart E. Genêt J. P. Safi M. Savignac M. and Sinou D. Palladium(0)-catalyzed substitution of allylic substrates in an aqueous–organic medium 505
Bläser D. see Billups W. E. 10693
Blechert S. Jansen R. and Velder J. Synthesis of new taxoids 9649
Blum J. Setty-Fichman M. Efron L. Shaik S. and Harvey R. G. On the regioselectivity in transformation of benzo[*a*]pyrene 4,5-oxide and 3-methylcholanthrene 11,12-oxide to the corresponding β-amino-alcohol derivatives 8505
Blunt J. W. see Perry N. B. 3987
Blunt J. W. see Trimurtulu G. 3993
Boche G. Lohrenz J. C. W. and Schubert F. Lithio-diazomethane and lithio-(trimethylsilyl)-diazomethane: theoretical and experimental studies of their structures, reactions and reaction products 5889
Bock M. Depke G. Egner U. Müller-Fahrnow A. and Winter G. Detection and characterization of polymorphic modifications of the anxiolytic drug ABECARNIL 13125
Bockhorst K. and Hoehn-Berlage M. An optimized synthesis of manganese *meso*-tetra(4-sulfonatophenyl)-porphine: a tumor-selective MRI contrast agent 8657
Boelens M. see Georgieva A. 9399
Boese R. see Billups W. E. 10693
Boese R. see Csuk R. 1111
Boeykens M. and De Kimpe N. Selective transformation of α,α-dibromomethyl ketones into α-monosulfenylated ketones 12349
Boga C. Manescalchi F. and Savoia D. Diastereoselective synthesis of 2,5-dimethylpyrrolidines and 2,6-dimethylpiperidines by reductive amination of 2,5-hexanedione and 2,6-heptanedione with hydride reagents 4709
Bohlmann R. see Bull J. R. 6347
Bohrisch J. Faltz H. Pätzel M. and Liebscher J. Chiral 1,4-diazepinones and 1,4-thiazepinones by diastereoselective ring chain transformation of α,β-unsaturated lactones or lactams 10701
Boivin J. Fouquet E. Schiano A.-M. and Zard S. Z. Iminyl radicals—III. Further synthetically useful sources of iminyl radicals 1769
Boivin J. Fouquet E. and Zard S. Z. Iminyl radicals—I. Generation and intramolecular capture by an olefin 1745
Boivin J. Fouquet E. and Zard S. Z. Iminyl radicals—II. Ring opening of cyclobutyl- and cyclopentyliminyl radicals 1757
Bojilova A. Videnova I. Ivanov C. Rodios N. A. Terzis A. and Raptopoulou C. P. Regio- and stereoselective 1,3-dipolar cycloaddition reactions of ethyl diazoacetate to 3-substituted 2*H*-1-benzopyran-2-ones 13023
Boland W. see Pohnert G. 10235
Boland W. see Veith M. 6859
Bolessa E. A. see Schwartz R. E. 1675
Boll P. M. see Prasad A. K. 10579
Boll P. M. see Prasad A. K. 2231
Bollinger A. M. see Ye M. 6109
Bollinger B. see Gmeiner P. 10909
Bolm C. and Müller J. Spectroscopic studies on the β-hydroxysulfoximine-catalyzed enantioselective alkylation of aldehydes 4355
Bolon P. J. Sells T. B. Nuesca Z. M. Purdy D. F. and Nair V. Novel isomeric dideoxy-nucleosides as potential antiviral agents 7747
Bols M. see Jespersen T. M. 13449
Bolte J. see Hecquet L. 8677
Boni M. Forti L. Ghelfi F. and Pagnoni U. M. An efficient procedure to α-hydroxyaldehyde dimethyl acetals 7897
Bonilha J. B. S. see Tedesco A. C. 3071
Bonjoch J. see Solé D. 9769
Bonnet P. A. see Chaouni-Benabdallah A. 12923
Bonnet-Delpon D. see Abouabdellah A. 11921
Boogaard A. T. Pandit U. K. and Koomen G.-J. Ring D modifications of ellipticine—I. New ellipticine derivatives from 1-cyano-6-methylellipticine 2551
Boogaard A. T. Pandit U. K. and Koomen G.-J. Ring D modifications of ellipticine—II. Chlorination of ellipticine via its N-oxide and synthesis and selective acetylation of 5,6,11-trimethyl-5*H*-benzo[*b*]carbazole 4811
Boons G.-J. Downham R. Kim K. S. Ley S. V. and Woods M. Dispiroketals in synthesis—X. Further reactions of dispoke

protected lactate and glycolate enolates 7157
Booth S. E. see Williams L. 13697
Börner A. Ward J. Ruth W. Holz J. Kless A. Heller D. and Kagan H. B. Synthesis and catalytic properties of an acyclic analogue of hydroxy norphos 10419
Borst J. P. see Reich H. J. 5869
Bosch E. see Rathore R. 6727
Bosch J. see Lavilla R. 5233
Bosco M. see Bartoli G. 2561
Bosco M. see Bartoli G. 9831
Bosman C. D'Annibale A. Resta S. and Trogolo C. Ultrasound effects on the Mn(III)-promoted addition of amidoalkyl radicals to olefins 13847
Bosnich B. see Barnhart R. W. 4335
Boteju L. W. Wegner K. Qian X. and Hruby V. J. Asymmetric synthesis of unusual amino acids: synthesis of optically pure isomers of *N*-indole-(2-mesitylenesulfonyl)-β-methyltryptophan 2391
Bott S. G. see Coxon J. M. 13037
Bott S. G. see Marchand A. P. 1687
Bott S. G. see Marchand A. P. 9933
Botta M. Saladino R. Gentile G. Summa V. Nicoletti R. Verri A. Focher F. and Spadari S. Researches on antiviral agents—IV. Studies on the chemistry of 6-methyl-2-methoxy-4-O-acyloxy and 6-methyl-2,4-di-O-acyloxy-pyrimidine derivatives as new acylation reagents and inhibitors of uracil DNA glycosylases 3603
Bottomley F. Chen J. and Chen R. A novel cyclocarbonylation reaction: synthesis of 1,2,8,9-tetrahydrocyclohepta[1,2,3-*fg*:4,5,6-*f'g'*]diacenaphthylene-5-one 2361
Boudreault N. Ball R. G. Bayly C. Bernstein M. A. and Leblanc Y. Conformational analysis of δ-lactams 7947
Bougie D. see Kraus G. A. 2681
Boulanger Y. see Hanessian S. 77
Boumzebra M. see Akssira M. 9051
Bouquant J. see Pale P. 8035
Bourgeois M.-J. see Montaudon E. 9335
Bourguignon J. see Leroy C. 13135
Bourne S. A. see Aleksandrov A. M. 8597
Bourzat J.-D. see Commerçon A. 10289
Boussoufi A. Parrain J.-L. Hudhomme P. and Duguay G. α-Methoxy-α-(6*H*-1,3-thiazin-2-yl)glycinates, precursors of 7-methoxycephems by [3+3] cyclocondensation reaction 12609
Bouyssi D. see Balme G. 403
Bovonsombat P. see Djuardi E. 11793
Bowden B. F. see Tanaka J. 9989
Bowman W. R. Clark D. N. and Marmon R. J. Generation of aminyl radicals using sulfenamides as synthetic precursors 1275
Bowman W. R. Clark D. N. and Marmon R. J. Synthesis of pyrrolizidines using aminyl radicals generated from sulfenamide precursors 1295
Bowyer M. C. see Black D. St. C. 10497
Bowyer M. C. see Black D. St. C. 10983
Boyd D. R. see Barr S. A. 11219
Boyd M. R. see Bringmann G. 7807
Boyd M. R. see Bringmann G. 9643
Boyd M. R. see Pettit G. R. 12097
Boyer F.-D. and Lallemand J.-Y. Enantioselective syntheses of polyhydroxylated nortropane derivatives: total synthesis of (+) and (–)-calystegine B_2 10443
Bracher F. and Hildebrand D. 1,9-Dimetalated β-carbolines. Versatile building blocks for the total synthesis of alkaloids 12329
Bradshaw J. S. see Dalley N. K. 2721
Braekman J. C. see Leclercq S. 8465
Braish T. F. see Chan S. 9943
Braña M. F. Castellano J. M. de Miguel P. Posada P. Sanz C. R. and Migallón A. S. Synthesis of 4-(4-pyridyl)oxazoles 10061
Brandi A. see Cordero F. M. 12713
Brandstetter T. and Maier M. E. Synthesis and oxidative activation of an oxabicyclo[7.2.1] enediyne 1435
Braschi I. Cardillo G. and Tomasini C. Synthesis and stereochemical behaviour of 8-alkyl-3-(1-phenylethyl)-7-oxa-1,3-diazabicyclo-[3.2.1]-octane-4,6-diones directed towards the synthesis of α-substituted β-amino acids 2955
Bravo P. see Arnone A. 12361
Bravo P. see Arnone A. 13485
Bravo P. Diliddo D. and Resnati G. An efficient entry to perfluoroalkyl substituted azoles starting from β-perfluoroalkyl-β-dicarbonyl compounds 8827
Breau L. see Ben R. N. 6061
Breeden D. C. and Coates R. M. 7-Epizingiberene, a novel bisabolane sesquiterpene from wild tomato leaves 11123
Brennan J. see Bertucco A. 8237
Brenstrum T. J. Brimble M. A. and Stevenson R. J. Directed *ortho* metalations of tertiary benzamides using lactones as electrophiles 4897
Bretón J. L. Cejudo J. J. García-Granados A. Parra A. and Rivas F. Partial synthesis of 6β-eudesmanolides and 6β-guaianolides from 6α-eudesmanolides: synthesis of analogues of artepaulin, colartin and tannunolide D 2917
Brimble M. A. see Brenstrum T. J. 4897
Brimble M. A. and Johnston A. D. Synthesis of bicyclic pyrazinones via addition of heterocyclic amines to a nitro-alkene 4887
Bringmann G. Gassen M. and Lardy R. 4-Hydroxynon-2-enal, a cytotoxic lipid peroxidation product, and its C_5-analog 4-hydroxypent-2-enal: enantioselective synthesis and stereo-analysis 10245
Bringmann G. Gulden K.-P. Hallock Y. F. Manfredi K. P. Cardellina, II J. H. Boyd M. R. Kramer B. and Fleischhauer J. Circular dichroism of michellamines: independent assignment of axial chirality by calculated and experimental CD spectra 7807
Bringmann G. Harmsen S. Holenz J. Geuder T. Götz R. Keller P. A. Walter R.

Hallock Y. F. Cardellina, II J. H. and Boyd M. R. 'Biomimetic' oxidative dimerization of korupensamine A: completion of the first total synthesis of michellamines A, B and C 9643
Bringmann G. Hartung T. Kröcher O. Gulden K.-P. Lange J. and Burzlaff H. Synthesis and absolute stereostructure of dinaphth[2,1-*c*:1',2'-*e*]oxepin-3-(5*H*)-one 2831
Brinkman J. see Jewell, Jr C. F. 3849
Broeders F. see Leclercq S. 8465
Brondi Alves R. see Arseniyadis S. 8399
Brook M. A. see Henry C. 11379
Brossmer R. see Isecke R. 7445
Brovarets V. S. see Van Meervelt L. 1889
Brown E. see Dujardin G. 9037
Brown E. see Sancéau J.-Y. 3363
Brown E. and Moudachirou M. Agents de dédoublement—II. Synthèse d'aryluréthanes de l'acide (*S*)-lactique et leur utilisation dans le dédoublement de bases racémiques 10309
Brown J. M. Hulmes D. I. and Guiry P. J. Mechanistic and synthetic studies in catalytic allylic alkylation with palladium complexes of 1-(2-diphenylphosphino-1-naphthyl)isoquinoline 4493
Brown R. F. C. Donohue A. C. Jackson W. R. and McCarthy T. D. Synthetic applications of optically active cyanohydrins. Enantioselective syntheses of the hydroxyamides tembamide and aegeline, the cardiac drug denopamine, and some analogues of the bronchodilator salbutamol 13739
Brown R. F. C. Jackson W. R. and McCarthy T. D. Potential routes to flavan-3-ols—II. The Mitsunobu reactions of *para*-oxygenated benzylic alcohols 5469
Brownlee R. T. C. see Chiu F. C. K. 889
Brückner R. see Goeppel D. 3687
Brückner R. see Keiner P. 13417
Bruhn S. see Tochtermann W. 9657
Bruice T. C. see Zhang H.-Y. 11339
Brumwell J. E. Simpkins N. S. and Terrett N. K. Radical cyclisations of dienes and enynes using phosphorus- and sulfur-centred radicals 13533
Brunet E. see Batra M. S. 8169
Brunne J. Hoffmann N. and Scharf H.-D. The temperature dependence of the diastereoselective reduction of 2-*t*-butylcyclohexanone with diisobutylaluminium-2,6-di-*t*-butyl-4-methylphenoxide 6819
Brunner H. and Fürst J. Enantioselective catalysis—LXXXV. Optically active expanded chelate phosphines derived from 1,ω-bis(dichlorophosphino)alkanes 4303
Bruno C. see Cuenca A. 1927
Bruno M. see Rodríguez B. 2289
Bruns C. see Lewis I. 7485
Bruzik K. S. see Pietrusiewicz K. M. 573
Buck I. M. Eleuteri A. and Reese C. B. Conversion of guanosine into acyclovir and its 6-deoxy derivative 9195
Buckley G. M. Pattenden G. and Whiting D. A. New synthetic probes of the iron transport system of *Paracoccus denitrificans* 11781
Bucsi I. Molnár Á. Bartók M. and Olah G. A. Transformation of 1,2-diols over perfluorinated resinsulfonic acids (Nafion-H) 8195
Budešínsky M. see Píš J. 9679
Buechler D. see Chengzhi C. 5735
Buelens J. see L'abbé G. 7019
Buemi G. see Chiacchio U. 5503
Bueno A. B. Carreño M. C. García Ruano J. L. Peña B. Rubio A. and Hoyos M. A. Stereoselective hydride reductions of chiral 2-*p*-tolylsulfinylcycloalkanones 9355
Bueno J. M. see Acerete C. 4765
Bügler S. see Schank K. 3721
Bujons J. Sánchez-Baeza F. and Messeguer A. A study of the interconversion between 3,4-dihydro-4-formyl-2-hydroxy-2*H*-benzopyran and 2,3,3a,8a-tetrahydro-2-hydroxyfuro[2,3-*b*]benzofuran moieties, and its application to a formal synthesis of (±)-aflatoxin B_1 7597
Bull J. R. Grundler C. Laurent H. Bohlmann R. and Müller-Fahrnow A. Cycloaddition mediated synthesis and rearrangement of 16-functionalised 14α,17α-etheno-19-norsteroids 6347
Bull J. R. Mountford P. G. Kirsch G. Neef G. Müller-Fahrnow A. and Wiechert R. Cycloaddition–fragmentation route to 14β-allylestrone and the derived 14α,17α-ethano analogue of estriol 6363
Bunnage M. E. Davies S. G. Goodwin C. J. and Ichihara O. An expeditious asymmetric synthesis of allophenylnorstatine 3975
Burdisso M. see Balsamini C. 3773
Bureau R. see Maruoka K. 3663
Burguete M. I. see Altava B. 7535
Burk M. J. Martinez J. P. Feaster J. E. and Cosford N. Catalytic asymmetric reductive amination of ketones via highly enantioselective hydrogenation of the C=N double bond 4399
Burke, Jr T. R. see Nomizu M. 2691
Burton D. J. Yang Z.-Y. and Morken P. A. Fluorinated organometallics: vinyl, alkynyl, allyl, benzyl, propargyl and aryl fluorinated organometallic reagents in organic synthesis 2993
Bury P. Hareau G. Kocienski P. and Dhanak D. Two syntheses of manoalide via heteroatom-assisted alkyne carbometallation 8793
Burzlaff H. see Bringmann G. 2831
Buschmann E. and Schäfer B. Eine neue Methode zur Darstellung α-chlorsubstituierter Zimtsäureester 2433
Buschmann H. see Hoffmann N. 11167
Busson R. see Augustyns K. 1189
Busson R. see Pannecouque C. 7231
Busto J. H. see Avenoza A. 12989
Buter J. see Edema J. J. H. 2095
Büyükgüngör O. see Dastan A. 10555

Caamaño O. Fernández F. Gómez G. and Nieto I. Synthesis of (1*R*,*cis*)-3-aminomethyl-1,2,2-trimethylcyclopentanemethan

ol: two approaches using α-camphidone 2175
Caballero E. Puebla P. Domercq M. Medarde M. López J.-L. and San Feliciano A. *N*-Substituted pyrrolinones from enamines and α-dicarbonyls 7849
Cabiddu S. Fattuoni C. Floris C. Melis S. and Serci A. Metallation reactions—XXI. Metallation of alkyl(alkylthio)-benzenes by superbases versus organolithium compounds 6037
Cabiddu S. Fattuoni C. Lucarini M. and Pedulli G. F. Radical-chain addition of benzenethiol to allenic esters: EPR and product studies 4001
Cacchi S. see Arcadi A. 437
Caddick S. see Parsons P. J. 13523
Cai P. see Yu S.-S. 11601
Çakmak O. see Adam W. 9009
Calderón A. de March P. el Arrad M. and Font J. Synthesis of 3-(1-hydroxyalkyl)-5*H*-furan-2-ones: study of their reaction with halogens 4201
Calkins T. L. see Grissom J. W. 4635
Calmes M. Daunis J. Jacquier R. and Natt F. Asymmetric synthesis of ketoprofen: a surprising base catalyst effect during asymmetric addition of pantolactone to methyl (3-benzoylphenyl) ketene 6875
Caló V. Fiandanese V. Nacci A. and Scilimati A. Chelation-controlled chemo-, regio- and enantioselective synthesis of homoallylic alcohols 7283
Calvani F. Crotti P. Gardelli C. and Pineschi M. Regiochemical control of the ring opening of 1,2-epoxides by means of chelating processes—VIII. Synthesis and ring opening reactions of *cis*- and *trans*-oxides derived from 3-benzyloxycyclohexene and 2-benzyloxy-5,6-dihydro-2*H*-pyran 12999
Camarasa M.-J. see Pérez-Pérez M.-J. 7269
Camarasa M.-J. see Velázquez S. 11013
Campayo L. see Acerete C. 4765
Campestrini S. and Di Furia F. Mechanism of alcohol oxidations by anionic peroxomolybdenum complexes 5119
Campi E. M. Chong J. M. Jackson W. R. and Van Der Schoot M. Synthesis of substituted α-methylene lactams by rhodium catalysed carbonylation of acetylenic amines 2533
Camps F. see Barrot M. 9789
Camps F. see Coll J. 7247
Canepa C. Antoniotti P. and Tonachini G. *Ab initio* theoretical study of the monomer–dimer equilibrium in lithium and sodium *gem*-difluoro allyl and methyl systems 8073
Canepa C. Prandi C. and Venturello P. Addition reaction of *gem*-dichloroallyl lithium to benzophenones in the presence of macrocyclic ligands: formation of chloro oxiranes 8161
Canepa C. and Tonachini G. *Ab initio* theoretical study of the monomer–dimer equilibrium in lithium and sodium *gem*-dichloro allyl and methyl systems 12511
Canle L. M. see Armesto X. L. 2265
Canle L. M. see Armesto X. L. 10509
Cano F. H. see Alcaraz C. 12443
Cano F. H. see Escolástico C. 12489
Cano F. H. see Marco J. L. 3509
Canu F. see Lesuisse D. 8491
Capdevila A. see Feixas J. 8539
Capella L. see Benati L. 12395
Capelli A. M. see Balsamini C. 3773
Capozzi G. see Mordini A. 6029
Caputo R. Palumbo G. and Pedatella S. Diastereoselective desulfurization of 5,6-dihydro-1,4-dithiins. Synthesis of muscalure from *Musca domestica* L. 7265
Carballo J. L. see Zubía E. 8153
Carboni B. see Peyronel J.-F. 189
Carceller R. García-Navío J. L. Izquierdo M. L. Alvarez-Builla J. Fajardo M. Gómez-Sal P. and Gago F. Azinium-*N*-(2'-azinyl)-aminides: synthesis, structure and reactivity 4995
Cardellicchio C. see Lopez L. 9097
Cardellina, II J. H. see Bringmann G. 7807
Cardellina, II J. H. see Bringmann G. 9643
Cardillo G. see Braschi I. 2955
Cardona G. see Luis J. G. 1217
Cardona L. García B. Pedro J. R. and Ruiz D. Synthetic studies toward natural furanosesquiterpenoids from santonin. Synthesis of (+)-1,2-dihydrotubipofuran 5527
Carnicelli V. see Arcadi A. 437
Carpita A. see Bellina F. 12029
Carpita A. see Bellina F. 4853
Carpita A. see Bellina F. 5189
Carrea G. see Bertinotti A. 13165
Carreiro J. C. see Tedesco A. C. 3071
Carreño M. C. see Bueno A. B. 9355
Carreño M. C. García Ruano J. L. and Urbano A. Tautomeric equilibrium of naphthazarin thioderivatives 5013
Carretero J. C. see Domínguez E. 7557
Carrié R. see Peyronel J.-F. 189
Carrié R. see Rahmouni M. 12625
Carroll A. R. see Tanaka J. 9989
Carrupt P. A. see Pale P. 8035
Carstens A. and Hoppe D. Generation of a configurationally stable, enantioenriched α-oxy-α-methylbenzyllithium: stereodivergence of its electrophilic substitution 6097
Carté B. K. see Compagnone R. S. 12785
Carver D. S. see Saville-Stones E. A. 6695
Casas J. see Coll J. 7247
Casati S. see Ferraboschi P. 3251
Cascio G. see Banfi L. 11967
Cascio G. see Banfi L. 11983
Casolari A. see Barco A. 11743
Cassels R. see Lawlor E. J. 8737
Castedo L. see Atanes N. 11257
Castedo L. see Estévez J. C. 2107
Castedo L. see Paleo M. R. 3627
Castellano J. M. see Braña M. F. 10061
Castells J. see Diez A. 6585
Castells J. López-Calahorra F. and Yu Z. 1-Alkoxycarbonylalkylidene-triphenylarsoranes: preparation and reactions 13765
Castillo B. see Farfán N. 9951
Castillón S. see Echarri R. 9125
Castillón S. see El-Laghdach A. 12219
Casuscelli F. see Chiacchio U. 5503

Casuscelli F. see Chiacchio U. 6671
Catalano M. M. see Black D. St. C. 10497
Cativiela C. see Avenoza A. 10021
Cativiela C. see Avenoza A. 12989
Cativiela C. Díaz-de-Villegas M. D. and Gálvez J. A. Asymmetric synthesis of 3,3-diphenyl-2-methylalanine, a new unusual α-amino acid for peptides of biological interest 9837
Cativiela C. Díaz-de-Villegas M. D. and Jiménez A. I. New α,β-didehydroamino acid derivatives as precursors in the synthesis of 1-aminocyclopropanecarboxylic acids 9157
Caubère C. Caubère P. Ianelli S. Nardelli M. and Jamart-Grégoire B. Aggregative activation and heterocyclic chemistry—I. Complex bases promoted arynic cyclisation of imines or enaminoketones; regiochemical synthesis of indoles 11903
Caubère C. Caubère P. Renard P. Bizot-Espiart J.-G. Ianelli S. Nardelli M. and Jamart-Grégoire B. Functionalisation of the alkoxy group of alkyl aryl ethers. Demethylation, alkylthiolation and reduction of 5-methoxyindoles 13433
Caubère P. see Caubère C. 11903
Caubère P. see Caubère C. 13433
Caubère P. see Fort Y. 11893
Cavicchio G. see Arnone A. 12361
Cejudo J. J. see Bretón J. L. 2917
Cerichelli G. Mancini G. and Luchetti L. Surfactant control of the *ortho/para* ratio in the bromination of anilines—II 3797
Chadwick D. J. see Barcock R. A. 4149
Chakrabarti A. K. see Pakrashi S. C. 12009
Chakraborty R. see Ranu B. C. 6579
Chakravarty A. K. Masuda K. Suzuki H. and Ageta H. Unambiguous assignment of ^{13}C chemical shifts of some hopane and migrated hopane derivatives by 2D NMR 2865
Challand S. R. see Agrofoglio L. 10611
Chan G. see Compagnone R. S. 12785
Chan K. S. and Mak C. C. A transition-metal mediated regioselective synthesis of phenyl quinones via sequential benzannulation and cross coupling reactions 2003
Chan P. C.- M. Chong J. M. and Kousha K. A practical enantioselective synthesis of the cigarette beetle sex pheromone serricornin 2703
Chan S. and Braish T. F. The tandem Michael-S_N2 reaction for the construction of the 3-azabicyclo[3.1.0]hexane ring system 9943
Chandrakumar N. see Bergander K. 5861
Chandra Mohan K. see Said M. A. 6989
Chandrasekaran S. see Das J. 11709
Chandrasekhar S. and Deo Roy C. A β,β,β-trialkoxyethyllithium stable towards fragmentation: a carboxyl protected acetic acid dianion equivalent 8099
Chandrasekharam M. see Rao Ch. S. 5783
Chaouni-Benabdallah A. Subra G. Bonnet P. A. Fernandez J. P. Chapat J. P. Vallet P. and Muller R. N. Nitroxides: synthesis and paramagnetic properties of an α-hydroxymethyl derivative of doxyl 12923
Chapat J. P. see Chaouni-Benabdallah A. 12923
Chattopadhyay S. see Mahato S. B. 10803
Chattopadhyaya J. see Garg N. 4167
Chattopadhyaya J. see Garg N. 5273
Chattopadhyaya J. see Papchikhin A. 5279
Chattopadhyaya J. see Rong J. 4921
Chattopadhyaya J. see Rousse B. 1777
Chattopadhyaya J. see Rousse B. 8711
Chattopadhyaya J. see Xi Z. 5255
Chaudhuri N. C. see Vankar Y. D. 11057
Chauhan V. S. see Jain R. 907
Chavasiri W. see Barton D. H. R. 19
Chavasiri W. see Barton D. H. R. 31
Chavasiri W. see Barton D. H. R. 47
Chávez M. I. and Delgado G. Isolation and relay synthesis of 11α-hydroperoxy diacetyl hederagenin, a novel triterpenoid derivative from *Serjania triquetra* (Sapindaceae). Biogenetic implications 3869
Chemin D. and Linstrumelle G. Palladium-catalyzed reaction of (*E*) and (*Z*)-dichloroethenes with 1-alkynes. An efficient stereospecific synthesis of (*E*) and (*Z*)-enediynes 5335
Chemla F. see Hoffmann R. W. 6049
Chen F. Mudryk B. and Cohen T. Generation, rearrangements and some synthetic uses of bishomoallyllithiums 12793
Chen J. see Bottomley F. 2361
Chen M.-F. see Clennan E. L. 8569
Chen R. see Bottomley F. 2361
Chen S.-H. Farina V. Huang S. Gao Q. Golik J. and Doyle T. W. Studies on the photochemistry of Taxol® 8633
Chen T. B. R. A. see Hilhorst E. 7837
Chen T. B. R. A. see Hilhorst E. 8863
Chen Z. see Beer P. D. 931
Cheng J.-F. see Tao X. L. 2017
Cheng X.-C. see Crews P. 13567
Chengzhi C. Buechler D. Lowe D. Urwyler S. and Shapiro G. Synthesis of a pyrimidine isostere of the *N*-methyl-D-aspartate antagonist SDZ EAB 515 5735
Cherkaoui O. see Nebois P. 8457
Cherkauskas J. P. see Cohen T. 11569
Chertanova L. see Šavrda J. 5309
Chiacchio U. Buemi G. Casuscelli F. Procopio A. Rescifina A. and Romeo R. Stereoselective synthesis of fused γ-lactams by intramolecular nitrone cycloaddition 5503
Chiacchio U. Casuscelli F. Corsaro A. Rescifina A. Romeo G. and Uccella N. Stereoselective control in 1,3-dipolar cycloaddition of nitrones to substituted styrenes 6671
Chiaroni A. see Audrain H. 1469
Chiaroni A. see Herczegh P. 13671
Chini M. Crotti P. Gardelli C. and Macchia F. Regiochemical control of the ring opening of 1,2-epoxides by means of chelating processes—VI. Opening reactions of 3,4-epoxytetrahydropyran 1261
Chisaka Y. see Koshima H. 13617
Chiu F. C. K. Brownlee R. T. C. and Phillips D. R.

Synthesis of 4-amino substituted and 4-unsubstituted 1,10-phenanthroline-3-carboxylic acid derivatives as potential DNA cleavage reagents 889
Chmielewski M. see Panfil I. 7219
Chong J. M. see Campi E. M. 2533
Chong J. M. see Chan P. C.-M. 2703
Chong W. K. M. see Avery M. A. 957
Chordia M. D. see Hazra B. G. 2523
Chorghade M. S. see Andersen K. E. 8699
Chou T. and Ko C.-W. Generation and chemical reactions of quinoxalino-*o*-quinodimethane 10721
Choudhary M. I. see Atta-ur-Rahman 12109
Christiaens L. E. see Jakobs A. E. 9315
Chu X.-J. see Liu Z.-Y. 12337
Chuche J. see Pale P. 8035
Chung D. S. see Lee I. 7981
Ciminale F. Lopez L. and Mele G. Reactions on aromatic olefins induced by aminium salts: protic acid or radical cation catalyzed processes 12685
Ciminiello P. see Albrizio S. 783
Cimino G. see Guo Y. 13261
Cinquini M. see Annunziata R. 2939
Cinquini M. see Annunziata R. 5821
Cinquini M. see Annunziata R. 9471
Cinquini M. see Mikołajczyk M. 8053
Cintas P. see Avalos M. 3273
Cladingboel D. E. see Özlü Y. 2183
Claes P. see Augustyns K. 1189
Claes P. see Pannecouque C. 7231
Claeson G. see Elgendy S. 3803
Claeson G. see Green D. 5099
Claramunt R. M. see Escolástico C. 12489
Clardy J. see Atta-ur-Rahman 12109
Clardy J. see Rodríguez J. 11079
Clark D. A. De Riccardis F. and Nicolaou K. C. Studies towards the synthesis of esperamicinone 11391
Clark D. N. see Bowman W. R. 1275
Clark D. N. see Bowman W. R. 1295
Clark T. J. see Davies H. M. L. 9883
Claudia C. Mincione E. Saladino R. and Nicoletti R. Oxidation of substituted 2-thiouracils and pyrimidine-2-thione with ozone and 3,3-dimethyl-1,2-dioxirane 3259
Clennan E. L. Koola J. J. and Chen M.-F. A comparison of substituent field effects on the regiochemistry of the ene reactions of allylic sulfides and ethers 8569
Coates B. Montgomery D. J. and Stevenson P. J. Efficient synthesis of 3-mono and disubstituted lactams using Meerwein Eschenmoser [3,3] sigmatropic rearrangements 4025
Coates R. M. see Breeden D. C. 11123
Cobo J. García C. Melguizo M. Sánchez A. and Nogueras M. Reactivity of 6-aminopyrimidin-4-(3*H*)-ones towards dimethyl acetylenedicarboxylate (DMAD). Tandem Diels–Alder/retro Diels–Alder (DA/RDA) reaction in the synthesis of 2-aminopyridines 10345
Cohen T. Zhang B. and Cherkauskas J. P. A general preparative method for carbonyl-protected γ-lithioketones via reductive lithiation. Synthetic uses of the bishomoenolate equivalents 11569
Cohen T. see Chen F. 12793
Cohen-Fernandes P. see Lammers H. 865
Cole D. C. Recent stereoselective synthetic approaches to β-amino acids 9517
Cole D. L. see Ravikumar V. T. 9255
Coll J. Reixach N. Sánchez-Baeza F. Casas J. and Camps F. New ecdysteroids from *Polypodium vulgare* 7247
Coll J. C. see Tanaka J. 9989
Collado I. G. Alonso M. S. Hernández-Galán R. Madero J. G. and Massanet G. M. Synthesis of bioactive 7-β-hydroxyeudesmanolides 10531
Collado I. G. Galán R. H. Massanet G. M. and Alonso M. S. Nucleophilic 1,2 addition of bromine to electron deficient double bonds by perbromide reagents 6433
Colombo D. see Garlaschelli L. 1211
Commerçon A. Bourzat J.-D. Bézard D. and Vuilhorgne M. Partial synthesis of major human metabolites of docetaxel 10289
Comotti A. see Bernardi A. 1227
Compagnone R. S. Faulkner D. J. Carté B. K. Chan G. Freyer A. Hemling M. E. Hofmann G. A. and Mattern M. R. Pentathiepins and trithianes from two *Lissoclinum* species and a *Eudistoma* sp.: inhibitors of protein kinase C 12785
Compernolle F. see Saleh M. A. 1811
Conde S. see Esteban A. I. 13865
Conde S. see Martín-Muñoz M. G. 6999
Condie G. C. see Black D. St. C. 10983
Condom R. see Agrofoglio L. 10611
Confalonieri G. Marotta E. Rama F. Righi P. Rosini G. Serra R. and Venturelli F. Practical preparation of bicyclo[3.2.0]hept-3-en-6-ones and its utilisation in stereoselective total synthesis of grandisol and lineatin via a versatile intermediate 3235
Connolly J. D. see Ayafor J. F. 9343
Consiglio G. see Frenna V. 7315
Constable E. C. Harverson P. Smith D. R. and Whall L. A. 4-*tert*-Butylphenyl solubilized oligopyridines 7799
Conte M. R. Fattorusso E. Lanzotti V. Magno S. and Mayol L. Lintenolides, new pentacyclic bioactive sesterterpenes from the Caribbean sponge *Cacospongia* cf. *linteiformis* 849
Conte M. R. Fattorusso E. Lanzotti V. Magno S. and Mayol L. Structure and absolute stereochemistry of cyclolinteinone, a novel monocarbocyclic sesterterpene from *Cacospongia* cf. *linteiformis* 13469
Conti P. S. see Alauddin M. M. 1699
Conti S. Cossu S. Giacomelli G. and Falorni M. Chiral ligands containing heteroatoms—XIII. Optically active 4-(2'-pyridyl)-1,3-oxazolidines: an improved synthesis of 2-(2'-pyridyl)-2-aminoalcohols 13493
Conti S. see Cossu S. 5083

Cook D. J. see Kadow J. F. 1519
Cook G. R. and Stille J. R. Stereochemical consequences of the Lewis acid-promoted 3-aza-Cope rearrangement of *N*-alkyl-*N*-allyl enamines 4105
Cook M. J. and Cracknell S. J. The Diels–Alder reaction of 2,5-dialkylfurans and fumaronitrile revisited 12125
Cook P. F. see Yang C. 1919
Cooper R. see Musza L. L. 11369
Cooper R. D. G. see Singh R. 12049
Coote S. J. see Allen J. V. 799
Copéret C. see Negishi E. 425
Coppola B. P. Noe M. C. Schwartz D. J. Abdon R. L. II and Trost B. M. Intermolecular 1,3-dipolar cycloadditions of münchnones with acetylenic dipolarophiles: sorting out the regioselectivity 93
Cordero F. M. Brandi A. Cristilli S. De Sarlo F. and Viti G. Syntheses of 3-phenyl substituted indolizidin-2-ones and a pyrrolizidin-2-one on the route to constrained potential NK_1 receptor antagonists 12713
Corsaro A. see Chiacchio U. 6671
Corsaro M. M. see Evidente A. 10371
Cosford N. see Burk M. J. 4399
Cossu S. see Conti S. 13493
Cossu S. see Giacometti A. 7913
Cossu S. Giacomelli G. Conti S. and Falorni M. Unusual reactivity of 4-carboxyamido-2-oxazoline systems: new synthesis of optically active *N*-sulphonyl derivatives 5083
Costantini C. see Mascagna D. 8757
Costero A. M. and Pitarch M. Association constants of alkaline complexes of macrolactones and crown ethers derived from biphenyl. Influence of the position and characteristics of biphenyl substituents 5381
Cotgreave I. A. see Engman L. 2929
Cotterill A. S. Hartopp P. Jones G. B. Moody C. J. Norton C. L. O'Sullivan N. and Swann E. Cyclopropamitosenes, novel bioreductive anticancer agents. Synthesis of 7-methoxycyclopropamitosene and related indolequinones 7657
Coudert G. see Moreau P. 3407
Courgeon T. see Peyronel J.-F. 189
Courtemanche G. see Meyer C. 11665
Cousins K. R. see Gilbert J. C. 10671
Coutts S. J. and Wallace T. W. Heterodiene cycloadditions: preparation and transformations of some substituted pyrano[4,3-*b*][1]benzopyrans 11755
Couture K. see Plé N. 10299
Cox G. G. Miller D. J. Moody C. J. Sie E.-R. H. B. and Kulagowski J. J. Rhodium–carbenoid mediated O–H insertion reactions. O–H Insertion versus H-abstraction and effect of catalyst 3195
Coxon J. M. Fong S. T. Lundie K. McDonald D. Q. Steel P. J. Marchand A. P. Zaragoza F. Zope U. R. Rajagopal D. Bott S. G. Watson W. H. and Kashyap R. P. Diastereofacial selectivity in Diels–Alder cycloadditions of methyl acrylate to facially differentiated unsymmetrical cyclohexa-1,3-dienes 13037
Cozzi F. see Annunziata R. 2939
Cozzi F. see Annunziata R. 5821
Cozzi F. see Annunziata R. 9471
Cracknell S. J. see Cook M. J. 12125
Craig D. C. see Bishop R. 8749
Craig D. C. see Black D. St. C. 10983
Crews P. Cheng X.-C. Adamczeski M. Rodríguez J. Jaspars M. Schmitz F. J. Traeger S. C. and Pordesimo E. O. 1,2,3,4-Tetrahydro-8-hydroxymanzamines, alkaloids from two different haplosclerid sponges 13567
Crews P. see Avery M. A. 957
Crews P. see Jaspars M. 7367
Crews P. see Rodríguez J. 11079
Crich D. and Yao Q. Mechanism of the rearrangement of 2-(vinyloxy)alkyl to 4-ketobutyl radicals 12305
Crisp G. T. and Glink P. T. Elaboration of the side chain of α-amino acids containing a vinyl iodide by palladium-catalysed coupling 2623
Crisp G. T. and Glink P. T. Elaboration of the side chain of α-amino acids by palladium-catalysed Stille couplings 3213
Cristau H.-J. see Mucha A. 12743
Cristilli S. see Cordero F. M. 12713
Crotti P. see Calvani F. 12999
Crotti P. see Chini M. 1261
Croucher P. D. Furneaux R. H. and Lynch G. P. Synthesis of 2-acetamido-1,2,4-trideoxy-1,4-imino-D-galactitol and -D-glucitol for evaluation as glycosidase inhibitors 13299
Crowe E. A. see Bell D. 6643
Crucianelli M. see Arnone A. 12361
Crusats J. see Ribó J. M. 3967
Csuk R. Glänzer B. I. Hu Z. and Boese R. Double stereodifferentiating Dreiding–Schmidt reactions 1111
Csuk R. Schaade M. and Schmidt A. Diastereoselective dimerization of aldonolactones 11885
Csuk R. and Dörr P. Convenient oxidative debenzylation using dimethyldioxirane 9983
Csuk R. and Schaade M. Fluoride mediated reactions of lactones with silyl ketene acetals 3333
Csuk R. and von Scholz Y. Synthesis of cyclopropyl carbocyclic nucleosides 10431
Cuadro A. M. and Alvarez-Builla J. 4,5-Dichloro-1,2,3-dithiazolium chloride (Appel's salt): reactions with N-nucleophiles 10037
Cuenca A. Bruno C. and Taddei A. Synthesis of 2-(4-nitrophenoxy)quinoxaline and its reactions with hydroxide ion in micellar systems 1927
Curotto J. E. see Schwartz R. E. 1675
Curran D. P. Yu H. and Liu H. Amide-based protecting/radical translocating (PRT) groups. Generation of radicals adjacent to carbonyls by 1,5-hydrogen transfer reactions of *o*-iodoanilides 7343
Curran W. V. see Ziegler, Jr C. B. 12085
Cushman M. see Lee E.-S. 9873
Cutler H. G. see Jacyno J. M. 11585
Czira G. see Fetter J. 4185
Czira G. see Sóti F. 8209
Czuppon T. see Fetter J. 4185

Dabbs S. see Atkins E. F. 7253

Dabovic M. Bjelakovic M. Andrejevic V. Lorenc L. and Mihailovic M. Lj. Photochemically induced mercuric oxide–iodine oxidation of some unsaturated steroid compounds 1833
Dagne E. Gunatilaka A. A. L. Asmellash S. Abate D. Kingston D. G. I. Hofmann G. A. and Johnson R. K. Two new cytotoxic cytochalasins from *Xylaria obovata* 5615
Dahdouh A. see Akssira M. 9051
Dalley N. K. Krakowiak K. E. Bradshaw J. S. England M. M. Kou X. and Izatt R. M. Crystal structure of the cryptand [3.3.3]–potassium iodide complex: a large coordination number for potassium ion 2721
Daloze D. see Leclercq S. 8465
Dalpozzo R. see Bartoli G. 9831
Dalvi P. V. see Pandey B. 3835
Dalvi P. V. see Pandey B. 3843
Daly J. W. see Garraffo H. M. 11329
Daly J. W. see Hutchinson K. D. 6129
Damm W. Hoffmann U. Macko L. Neuburger M. Zehnder M. and Giese B. Stereoselective reactions of α-imide substituted radicals 7029
Danieli B. Lesma G. Mauro M. Palmisano G. and Passarella D. A highly enantioselective synthesis of (−)-antirhine by chemo-enzymatic approach 8837
Danieli B. Lesma G. Palmisano G. Passarella D. and Silvani A. Aspidosperma alkaloids via cyclization of secodine intermediate: synthesis of (±)-3-oxovincadifformine ethyl ester 6941
D'Annibale A. see Bosman C. 13847
D'Anniballe P. see Palmisano G. 9487
Daran J.-C. see Farfán N. 9951
Das B. C. see Laprévote O. 8479
Das I. see Roy S. 1847
Das J. and Chandrasekaran S. Heterogeneous permanganate oxidations: synthesis of medium ring ketolactones via substituent directed oxidative cyclisation 11709
Das P. J. and Khound S. Synthesis of 1-aryl-3,3-disubstituted triazenes on ion-exchange resin support 9107
Dastan A. Balcı M. Hökelek T. Ülkü D. and Büyükgüngör O. High temperature bromination—VI. Bromination of benzobarrelene 10555
Daub V. E. E. see Maercker A. 2439
Daucher B. see Jordine G. 139
Daucher B. see Jordine G. 4037
Daunis J. see Calmes M. 6875
D'Auria M. V. Paloma L. G. Minale L. Zampella A. Verbist J.-F. Roussakis C. Debitus C. and Patissou J. Reidispongiolide A and B, two new potent cytotoxic macrolides from the New Caledonian sponge *Reidispongia coerulea* 4829
Davies H. M. L. and Clark T. J. Synthesis of highly functionalized tropolones by rhodium(II)-catalyzed reactions of vinyldiazomethanes with oxygenated dienes 9883
Davies S. G. see Bunnage M. E. 3975
Davies S. G. Edwards A. J. Evans G. B. and Mortlock A. A. Bifunctional chiral auxiliaries—VII. Aldol reactions of enolates derived from 1,3-diacylimidazolidine-2-thiones and 1,3-diacylimidazolidin-2-ones 6621
Davies S. G. Evans G. B. and Pearce S. Bifunctional chiral auxiliaries—VIII. Utilisation of tartaric acid derived auxiliaries in aldol and alkylation reactions 7521
Davis C. A. see Söderberg B. C. 61
Dawood K. M. see Farag A. M. 5091
Dawson G. J. see Allen J. V. 799
Deadman J. see Elgendy S. 3803
Deadman J. see Green D. 5099
de Ancos B. Maestro M. C. Martín M. R. and Mateo A. I. Reactions of pyrrolidine enamines of cyclic and acyclic 3,4-dioxobutanoic acid derivatives with dimethyl acetylenedicarboxylate. A new case of atropoisomerism 13857
Deb B. see Patro B. 255
Debitus C. see D'Auria M. V. 4829
Debitus C. see Dopeso J. 3813
Debitus C. see Kourany-Lefoll E. 3415
De Boeck B. Jiang S. Janousek Z. and Viehe H. G. α-Cyclization of tertiary amines—III. Captodative or push–pull enamines form pyrrolines, pyrrolizidines and their ring homologues with dimethyl acetylenedicarboxylate in a highly diastereoselective reaction 7075
De Clercq E. see Melguizo M. 13511
Declercq J.-P. see L'abbé G. 7019
Declercq J.-P. see Markó I. E. 4557
De Clercq P. J. see Zhu G.-D. 7049
de Echagüen C. O. and Ortuño R. M. The bromination of β-angelica lactone revisited: synthesis of new 3-bromo-5-methylene- and 3-bromo-5-methyl-2(5*H*)-furanones 12457
Deepak D. see Srivastav S. 789
de Frutos Mª P. see Alcaraz C. 12443
de Groot A. see Gijsen H. J. M. 4733
de Groot A. see Gijsen H. J. M. 4745
de Groot A. see Minnaard A. J. 4755
de Groot A. see Piet D. P. 3169
de Groot A. see Swarts H. J. 10083
de Groot A. see Verstegen-Haaksma A. A. 10073
de Groot A. see Verstegen-Haaksma A. A. 10095
Dehaen W. see L'abbé G. 7019
de Inestrosa Villatoro E. P. see Suau R. 4987
de Kanter F. J. J. see Schmitz R. F. 5933
Dekhane M. and Dodd R. H. A new efficient synthesis of ethyl β-carboline-3-carboxylate (β-CCE) and methyl 4-methyl-β-carboline-3-carboxylate (4-methyl-β-CCM) starting from indole-2-carboxaldehyde 6299
De Kimpe N. see Boeykens M. 12349
De Kimpe N. see Georgieva A. 9399
de Lange B. see Faber W. S. 4775
de la Torre M. C. see Rodríguez B. 2289
de la Torre M. C. see Rodríguez B. 5451
de la Torre M. C. Domínguez G. Rodríguez B. Perales A. Simmonds M. S. J. and Blaney W. M. Some remarkable reactions of the diterpene eriocephalin: neo-clerodane derivatives with insect antifeedant activity 13553

Delgado G. see Chávez M. I. 3869
Delisser V. M. see Hale K. J. 9181
Dell'Erba C. Novi M. Petrillo G. and Tavani C. A novel approach to 1*H*-indazoles via arylazosulfides 3529
Dell'Erba C. Novi M. Petrillo G. and Tavani C. An easy access to 2-oxohydrazones via electrophilic α-*p*-tolylhydrazonylation of ketone enolates with *tert*-butyl *p*-tolylazo sulfide 11239
Delmond B. see Mark F. 3381
de los Santos J. M. see Palacios F. 12727
De Lucchi O. see Giacometti A. 7913
de March P. see Calderón A. 4201
de Marigorta E. M. see SanMartín R. 2255
Demchuk D. V. see Strelenko Y. A. 10107
de Meijere A. see Albrecht K. 383
De Mesmaeker A. see Lesueur C. 5369
de Miguel P. see Braña M. F. 10061
Demir A. S. see Akhmedov I. M. 2099
Dempsey P. J. F. see Milgrom L. R. 13477
Demuynck C. see Hecquet L. 8677
Deng L. see Jacobsen E. N. 4323
De Nino A. see Bartoli G. 9831
Denisenko V. E. see Komarov I. V. 6921
Denisov A. Yu. see Tkachev A. V. 11459
Denisov A. Yu. see Tkachev A. V. 2591
Dennington, II R. D. see Holder A. J. 627
deNys R. see Tanaka J. 9989
Deo Roy C. see Chandrasekhar S. 8099
Depke G. see Bock M. 13125
De Riccardis F. see Clark D. A. 11391
De Risi C. see Barco A. 10491
De Risi C. see Barco A. 2583
Deroover G. G. see Van Aken K. J. 5211
De Santis M. see Bellina F. 12029
De Santis M. see Bellina F. 4853
De Sarlo F. see Cordero F. M. 12713
Deshpande A. K. see Doctorovich F. 5945
Deshpande S. R. Likhite A. P. and Rajappa S. Transesterification of alkyl carbamate to aryl carbamate: effect of varying the alkyl group 10367
Desimoni G. Faita G. Righetti P. P. Sfulcini A. and Tsyganov D. Solvent effect in pericyclic reactions—IX. The ene reaction 1821
Desponds O. and Schlosser M. How advantageous is the intramolecular aggregation of 1,4-organodilithio compounds? 5881
Destabel C. Kilburn J. D. and Knight J. Alkyl radical cyclisations of methylenecyclopropane derivatives 11267
Destabel C. Kilburn J. D. and Knight J. Malonate radical cyclisations of methylenecyclopropane derivatives 11289
Dettner K. see Veith M. 6859
Devasagayaraj A. see Periasamy M. 6955
Devi Reddy G. see Pandey G. 8185
de Vries A. H. M. Jansen J. F. G. A. Feringa B. L. Enantioselective conjugate addition of diethylzinc to chalcones catalysed by chiral Ni(II) aminoalcohol complexes 4479
de Vries N. K. see Hulst R. 11721
De Wolf W. H. see Kane V. V. 4575
Dewynter G. see Serra C. 8427
de Zoete M. C. see Nieuwenhuis S. A. M. 13207
Dhal R. Landais Y. Lebrun A. Lenain V. and Robin J. P. Ruthenium dioxide in fluoro acid medium—V. Application to the non phenolic oxidative coupling of diarylbutanes. Conformational studies of *cis* and *trans* deoxyschizandrins 1153
Dhal R. see Sancéau J.-Y. 3363
Dhanak D. see Bury P. 8793
Dhanalekshmi S. Balasubramanian K. K. and Venkatachalam C. S. Anodic oxidation of aryl propargyl and aryl allyl ethers at a platinum electrode 6387
Diaz M. C. see Jaspars M. 7367
Diaz M. C. see Rodríguez J. 11079
Díaz-de-Villegas M. D. see Cativiela C. 9157
Díaz-de-Villegas M. D. see Cativiela C. 9837
Di Bugno C. see Pini D. 205
Dietrich W. see Heuer M. 2029
Diez A. Castells J. Forns P. Rubiralta M. Grierson D. S. Husson H.-P. Solans X. and Font-Bardía M. Synthetic applications of 2-(1,3-dithian-2-yl)indoles—IV. New synthesis of the tetracyclic ABED ring system of *Strychnos* alkaloids 6585
Díez B. R. see Martínez A. G. 13231
Díez D. see Marcos I. S. 12655
Díez D. see Urones J. G. 10995
Di Furia F. see Campestrini S. 5119
Diliddo D. see Bravo P. 8827
Dilillo F. see Giacometti A. 7913
Ding W. see Krishnamurthy G. 1341
d'Ischia M. see Mascagna D. 8757
Di Vona M. L. Luchetti L. and Rosnati V. Zinc-promoted reactions—VIII. The effect of ring strain in the reduction of 1,2-dibenzoylcycloalkanes 2949
Di Vona M. L. Luchetti L. and Rosnati V. Zinc-promoted reactions—IX. The fate of the cyano group in the reduction of simple cyanoketones and *N*-cyanoamines 8203
Dixon N. J. see Bell D. 6643
Djuardi E. Bovonsombat P. and Mc Nelis E. Ring expansions of 2-haloethynyl-2-norbornanols 11793
Dmitriev D. E. see Strelenko Y. A. 10107
Dmowski W. see Porwisiak J. 122590
Doctorovich F. Deshpande A. K. and Ashby E. C. Concerning the preparation of geminal di-Grignard reagents. The mechanism of reaction of geminal dihalides with magnesium and sodium 5945
Doctorovich F. see Nudelman N. S. 4651
Dodd R. H. see Dekhane M. 6299
Dodziuk H. Sybilska D. Miki S. Yoshida Z. Sitkowski J. Asztemborska M. Bielejewska A. Kowalczyk J. Duszczyk K. and Stefaniak L. Structure of cyclodextrins and their complexes—IV. Chromatographic and NMR study of 1,2,3-tri-*t*-butylnaphthalene and its complex with γ-cyclodextrin 3619
Doherty K. see Ley S. V. 12267
Doi Y. Ishibashi M. and Kobayashi J. Isolation and structure of shimofuridins B–G from the

Okinawan marine tunicate *Aplidium multiplicatum* 8651
Dokic S. see Lazarevski G. 12201
Dolle F. see Pannecoucke X. 1173
Dolle F. see Parmentier G. 5361
Dollé F. see Parmentier G. 7341
Dols P. P. M. A. Arnouts E. G. Rohaan J. Klunder A. J. H. and Zwanenburg B. Nucleophilic additions to tricyclodecadienone epoxides. The Payne rearrangement of α,β-epoxycyclopentanols contained in a rigid tricyclic system 3473
Dols P. P. M. A. Klunder A. J. H. and Zwanenburg B. 4-Hydroxycyclopent-2-en-1-one and derivatives as chiral synthetic equivalents of cyclopentadienone in asymmetric Diels–Alder reactions 8515
Domercq M. see Caballero E. 7849
Domínguez D. see Paleo M. R. 3627
Domínguez E. see González-Cameno A. M. 10971
Domínguez E. see SanMartín R. 2255
Domínguez E. see Sotomayor N. 2207
Domínguez E. and Carretero J. C. Flexible and stereoselective construction of polypropionate chains from enantiomerically pure γ-hydroxy-α,β-unsaturated sulfones 7557
Domínguez G. see de la Torre M. C. 13553
Domínguez R. M. see Esquivel B. 11593
Dong H. see Liu Z.-Y. 12337
Dongo E. see Ayafor J. F. 9343
Donohue A. C. see Brown R. F. C. 13739
Dookran R. Maharaj D. Mootoo B. S. Ramsewak R. McLean S. Reynolds W. F. and Tinto W. F. Briarane and asbestinane diterpenes from *Briareum asbestinum* 1983
Dopeso J. Quiñoá E. Riguera R. Debitus C. and Bergquist P. R. Euryspongiols: ten new highly hydroxylated 9,11-secosteroids with antihistaminic activity from the sponge *Euryspongia* sp. Stereochemistry and reduction 3813
Döpp D. see Bátori S. 4699
D'Orazio R. see Vanden Eynde J.-J. 2479
Dörr P. see Csuk R. 9983
Dowd P. see Zhang W. 12579
Downham R. see Boons G.-J. 7157
Doyle K. J. and Moody C. J. The rhodium carbenoid route to oxazoles. Synthesis of 4-functionalised oxazoles; three step preparation of a bis-oxazole 3761
Doyle M. P. Eismont M. Y. Protopopova M. N. and Kwan M. M. Y. Enantioselective intramolecular cyclopropanation of *N*-allylic- and *N*-homo-allylic diazoacetamides catalyzed by chiral dirhodium(II) catalysts 1665
Doyle M. P. Eismont M. Y. Protopopova M. N. and Kwan M. M. Y. Enantioselective intramolecular cyclopropanation of *N*-allylic- and *N*-homo-allylic diazoacetamides catalyzed by chiral dirhodium(II) catalysts 4519
Doyle T. W. see Chen S.-H. 8633
Doyle T. W. see Kadow J. F. 1519
Doyle T. W. see Langley D. R. 1379
Drach B. S. see Van Meervelt L. 1889
Drake R. see Pelter A. 13775
Drake R. see Pelter A. 13801
Drake R. see Pelter A. 13829
Du Z. see Marchand A. P. 1687
Duddu R. Eckhardt M. Furlong M. Knoess H. P. Berger S. and Knochel P. Preparation and reactivity of chiral β-amido-alkylzinc iodides and related configurationally stable zinc organometallics 2415
Dueñas J. García-Granados A. Martínez A. and Parra A. Rearrangements of 14-mesyloxy-*ent*-beyer-15-enes 10761
Duffin H. C. see Bergman J. S. 11527
Duguay G. see Boussoufi A. 12609
Duhamel L. see Goument B. 171
Dujardin G. Rossignol S. Molato S. et Brown E. Synthèse asymétrique et configuration absolue de dihydropyranes substitués, par hétérocycloaddition intermoléculaire d'éthers vinyliques chiraux 9037
Dulik D. M. see Jacyno J. M. 11585
Dunoguès J. see Bennetau B. 1179
Dupas G. see Leroy C. 13135
Durst T. see Ben R. N. 6061
Dussault P. H. Woller K. R. and Hillier M. C. Stereoselective dioxygenation of enoates 8929
Duszczyk K. see Dodziuk H. 3619
Duthaler R. O. Recent developments in the stereoselective synthesis of α-aminoacids 1539
Dutta P. K. see Pakrashi S. C. 12009
Dutta S. K. see Maity S. K. 6965
Dykstra R. R. see Reich H. J. 5869

Earl R. A. see Agrofoglio L. 10611
Easton C. J. Hutton C. A. Roselt P. D. and Tiekink E. R. T. Stereocontrolled synthesis of β-hydroxyphenylalanine and β-hydroxytyrosine derivatives 7327
Echarri R. Matheu Mª I. and Castillón S. Isochromane 'versus' O-glycoside synthesis. A study of the reaction of 2-alkoxy-2-fluoro-glycosyl fluorides with alcohols 9125
Echeverri F. see Luis J. G. 10963
Echeverri F. see Luis J. G. 1217
Eck R. and Simon H. Preparation of (*S*)-2-substituted succinates by stereospecific reductions of fumarate and derivatives with resting cells of *Clostridium formicoaceticum* 13631
Eck R. and Simon H. Preparation of both enantiomers of malic and citramalic acid and other hydroxysuccinic acid derivatives by stereospecific hydrations of *cis* or *trans* 2-butene-1,4-dioic acids with resting cells of *Clostridium formicoaceticum* 13641
Eckhardt M. see Duddu R. 2415
Edema J. J. H. Buter J. and Kellogg R. M. Synthesis of the macrocyclic thiocrown ethers 1,4,7,10,13,16,19-heptathiaheneicosane (21-S-7) and 1,4,7,10,13,16,19,22-octathiatetraeicosane (24-S-8) 2095
Edmondson S. D. see Paquette L. A. 4071
Edwards A. J. see Davies S. G. 6621
Edwards M. L. Stemerick D. M. and McCarthy J. R. Use of the Mitsunobu reaction

in the synthesis of polyamines 5579
Eevers W. see Peeters L. D. 11533
Efron L. see Blum J. 8505
Eger K. Jalalian M. and Schmidt M. Synthesis of a potential antiviral compound: 5-bromoethynyl-2'-deoxyuridine 8371
Egert E. see Fitjer L. 10879
Egner U. see Bock M. 13125
Eguchi S. see Yamamoto Y. 7783
Eguchi T. see Yamauchi N. 4125
Eigen P. see Schank K. 3721
Eikemeyer J. see Schole J. 1125
Eisenhardt S. see Rosmanitz P. 5719
Eismont M. Y. see Doyle M. P. 1665
Eismont M. Y. see Doyle M. P. 4519
Eisner T. see McCormick K. D. 2365
el Arrad M. see Calderón A. 4201
Elbaum D. Nguyen T. B. Jorgensen W. L. and Schreiber S. L. Synthesis and investigations of enetetraynes 1503
El-Emary T. I. see Aly M. F. 895
Eleuteri A. see Buck I. M. 9195
El-Laghdach A. Matheu Mª I. and Castillón S. Synthesis of 2'-deoxy-pyranosyl nucleosides from glycals through consecutive addition of phenylselenenyl chloride and glycosylation. A study of factors controlling the stereoselectivity 12219
Elgemeie G. E. H. and Hussain B. A. W. A convenient synthesis of 5-deaza nonclassical antifolates: reaction of cyanothioacetamide with sodium salts of 2-(hydroxymethylene)-1-cycloalkanones 199
Elgendy S. Claeson G. Kakkar V. V. Green D. Patel G. Goodwin C. A. Baban J. A. Scully M. F. and Deadman J. Facile routes to 1-halo-1-alkyl boronic esters as precursors for novel thrombin inhibitors 3803
Elgendy S. see Green D. 5099
Elguero J. see Escolástico C. 12489
Elkholy Y. M. see Erian A. W. 1877
Elkhoshnieh Y. O. see Abdou W. M. 3595
Ellestad G. A. see Krishnamurthy G. 1341
El-Nagger G. M. see Aly M. F. 895
El-Seedi H. R. see Bach K. K. 7543
Elsevier C. J. see van Asselt R. 323
Elson S. W. see Lawlor E. J. 8737
Elwahy A. H. M. see Ibrahim Y. A. 11489
Elworthy T. R. and Meyers A. I. The configurational stability of chiral lithio α-amino carbanions. The effect of Li–O versus Li–N complexation 6089
Emslie N. D. see Mason P. H. 12001
Enders D. Schäfer T. Piva O. and Zamponi A. Enantioselective synthesis of 2-sulfenylated aldehydes: alkylation of sulfenylated acetaldehyde SAMP-hydrazones 3349
Endo Y. see Ohta T. 5659
Engel T. see Griesbeck A. G. 701
Engels J. W. see Mag M. 10225
Engels J. W. see Rosmanitz P. 5719
England M. M. see Dalley N. K. 2721
Engman L. Andersson C. Morgenstern R. Cotgreave I. A. Andersson C.-M. and Hallberg A. Evidence for a common selenolate intermediate in the glutathione peroxidase-like catalysis of α-(phenylselenenyl) ketones and diphenyl diselenide 2929
Epifani E. see Florio S. 5037
Eppers O. see Bergander K. 5861
Epsztajn J. Józwiak A. and Krysiak J. A. Application of organolithium and related reagents in synthesis—XIV. Synthetic strategies based on aromatic metallation. A concise regiospecific conversion of benzoic acids into their *ortho*-pyridoyl derivatives 2907
Erhart B. see Schwarz S. 10709
Erian A. W. Sherif S. M. Alassar A.-Z. A. and Elkholy Y. M. β-Enaminonitriles in heterocyclic synthesis: a novel synthesis and transformations of α-substituted-β-enaminonitriles 1877
Eritja R. see Montserrat F. X. 2617
Ershov B. A. see Zelenin K. N. 11447
Escolástico C. Santa María M. D. Claramunt R. M. Jimeno M. L. Alkorta I. Foces-Foces C. Cano F. H. and Elguero J. Imidazole and benzimidazole addition to quinones. Formation of *meso* and D,L isomers and crystal structure of the D,L isomer of 2,3-bis(benzimidazol-1'-yl)-1,4-dihydroxybenzene 12489
Escribano A. García Ruano J. L. Martín Castro A. M. and Rodríguez J. H. Highly diastereoselective hydrocyanation of α-sulfinyl cycloalkanones 7567
Espada M. see Ocaña B. 9505
Espín M. see Andrieux C. P. 6913
Esquivel B. Domínguez R. M. Hernández-Ortega S. Toscano R. A. and Rodríguez-Hahn L. Salvigenane and isosalvipuberulan diterpenoids from *Salvia leucantha* 11593
Esser T. Farkas F. Mangholz S. and Séquin U. Concerning the reaction of *anti*-benzene dioxide with various nucleophiles 3709
Esteban A. I. Juanes O. Martínez A. and Conde S. Regioselective lipase-mediated acylation–deacylation in thiadiazine diacyclonucleosides 13865
Estévez C. Venemalm L. Alvarez M. and Joule J. A. Synthesis of a 1,3,4,5-tetrahydropyrrolo[4,3,2-*de*]quinoline 7879
Estévez J. C. Villaverde M. C. Estévez R. J. and Castedo L. Radical cyclization to aporphines. A new, efficient total synthesis of the aporphine glaucine and the 4,5-dioxoaporphine pontevedrine, and the first total synthesis of 5-oxoaporphines 2107
Estévez R. J. see Estévez J. C. 2107
Estévez-Braun A. Estévez-Reyes R. and González A. G. Structural elucidation and conformational analysis of new lignan butenolides from the leaves of *Bupleurum salicifolium* 5203
Estévez-Reyes R. see Estévez-Braun A. 5203
Eswaramoorthy D. see Ramachandran M. S. 9495
Eto M. Aoki T. and Harano K. Sequential pericyclic reactions of cyclopentadienone with nonconjugated dienes.

Intramolecular cycloaddition reactivity of the decarbonylated primary cycloadducts and X-ray structure of DDA adduct 13395
Ettouati L. see Perry N. B. 3987
Ettouati L. see Trimurtulu G. 3993
Eustache J. and Grob A. Synthesis of the 4 possible stereoisomers of 3-*O*-stearoyl C_{36}-corynomycolic acid and derived lipopeptides 6271
Evans G. B. see Davies S. G. 6621
Evans G. B. see Davies S. G. 7521
Evans G. R. see Markó I. E. 4557
Evans T. A. see Barr S. A. 11219
Evidente A. Lanzetta R. Abouzeid M. A. Corsaro M. M. Mugnai L. and Surico G. Foeniculoxin, a new phytotoxic geranylhydroquinone from *Phomopsis foeniculi* 10371
Exner O. see Bauer P. J. 1707

Faber K. see Mischitz M. 8661
Faber W. S. Kok J. de Lange B. and Feringa B. L. Catalytic kinetic resolution of 5-alkoxy-2(5*H*)-furanones 4775
Fabio P. see Ziegler, Jr C. B. 12085
Fabriás G. see Barrot M. 9789
Fache-Dany F. see Schaeffer P. 12633
Fachini M. see Bertucco A. 8237
Fagnoni M. Mella M. and Albini A. Scope and mechanism of the electron transfer photoinduced alkylation of an aromatic nitrile 6401
Faigl F. see Schlosser M. 2071
Faita G. Mella M. Righetti P. and Tacconi G. An easy Lewis acid-mediated isomerization from (*E*)- to (*Z*)-oxoindolin-3-ylidene ketones 10955
Faita G. see Desimoni G. 1821
Fajardo M. see Carceller R. 4995
Falorni M. see Conti S. 13493
Falorni M. see Cossu S. 5083
Faltz H. see Bohrisch J. 10701
Fantin G. Fogagnolo M. Guerrini R. Marastoni M. Medici A. and Pedrini P. Conformationally constrained amino acids: a concise route to a methionine analogue 12973
Farag A. M. Shawali A. S. Algharib M. S. and Dawood K. M. One-step synthesis of novel 2,2'-bi(4,5-dihydro-1,3,4-thiadiazole) and 2,3-disubstituted 1,4-benzothiazine derivatives 5091
Farese A. see Agrofoglio L. 10611
Farfán N. Santillan R. Guzmán J. Castillo B. Ortíz A. Daran J.-C. Robert F. and Halut S. New tricyclic products from the reaction of 2,3-butanedione and ethanolamine 9951
Farina V. see Chen S.-H. 8633
Fariña F. Martín M. V. and Romañach M. Diels–Alder reactions with 2-methylpyridazin-3(2*H*)-ones bearing electron-withdrawing substituents at the 4- or 5-position 5169
Farkas F. see Esser T. 3709
Farr R. A. Holland A. K. Huber E. W. Peet N. P. and Weintraub P. M. Pyrrolidine and hexahydro-1*H*-azepine mimics of the 'flap up' mannosyl cation 1033
Fathallah M. see Moreno-Mañas M. 11213
Fattorusso E. see Albrizio S. 783
Fattorusso E. see Conte M. R. 849
Fattorusso E. see Conte M. R. 13469
Fattuoni C. see Cabiddu S. 4001
Fattuoni C. see Cabiddu S. 6037
Fau de Casa-Juana M. see Pastor A. 8085
Faulkner D. J. see Pika J. 3065
Faulkner D. J. see Trimurtulu G. 3993
Faulkner D. J. see Compagnone R. S. 12785
Faure R. see Praly J.-P. 6559
Favier A. see Baret P. 2077
Fazio C. see Rodríguez B. 2289
Feaster J. E. see Burk M. J. 4399
Fehlhaber H.-W. see Marzian S. 5299
Feigelson G. B. see Ziegler, Jr C. B. 12085
Feixas J. Capdevila A. and Guerrero A. Utilization of neutral alumina as a mild reagent for the selective cleavage of primary and secondary silyl ethers 8539
Feneau-Dupont J. see L'abbé G. 7019
Fenet B. see Nebois P. 8457
Fenton G. see Bennett F. 5147
Feringa B. L. see de Vries A. H. M. 4479
Feringa B. L. see Faber W. S. 4775
Feringa B. L. see Hulst R. 11721
Fernández F. see Caamaño O. 2175
Fernández J. J. see Norte M. 9175
Fernandez J. P. see Chaouni-Benabdallah A. 12923
Fernández Mª D. see Alcaraz C. 12443
Fernández-Mayoralas A. see Asensio J. L. 6417
Ferraboschi P. Casati S. Grisenti P. and Santaniello E. Selective enzymatic transformations of itaconic acid derivatives: an access to potentially useful building blocks 3251
Ferraboschi P. Grisenti P. Manzocchi A. and Santaniello E. Baker's yeast-mediated reduction of α-hydroxy ketones and derivatives: the steric course of the biotransformation 10539
Ferreira D. see Rossouw W. 12477
Fetter J. Giang L. T. Czuppon T. Lempert K. Kajtár-Peredy M. and Czira G. Simple and condensed β-lactams—XX. Reaction of some 1-(4-methoxyphenyl)azetidin-2-ones with cerium(IV) ammonium nitrate (CAN): trapping of the quinone imine intermediate with chloride and iodide anions 4185
Fiandanese V. see Caló V. 7283
Fiandanese V. see Lopez L. 9097
Fiandri G. L. see Benassi R. 12469
Fiaud J.-C. see Legros J.-Y. 465
Fierros M. see Martín-Muñoz M. G. 6999
Fillion H. see Nebois P. 8457
Finlay H. see Strunz G. M. 11113
Fioravanti S. see Barani M. 3829
Fioravanti S. see Barani M. 11235
Fioravanzo E. see Gennari C. 8815
Fischer P. M. Solbakken M. and Undheim K. Solution synthesis of a dimeric pentapeptide: diketopiperazine cyclisation of Glu–Asp dipeptide esters and Asp-racemisation during segment condensation 2277
Fitjer L. Kanschik A. and Majewski M.

Synthesis and rearrangement of dispiro[3.1.3.2]-, dispiro-[3.0.3.3]- and dispiro[3.0.4.2]-undecanes—new entries to [3.3.3]propellanes 10867
Fitjer L. Rissom B. Kanschik A. and Egert E. Synthesis and rearrangement of dispiro[2.0.3.4]-, dispiro[3.0.3.3]- and dispiro[2.1.3.3]undecanes—preferred C_4–C_5 over C_3–C_4 and C_4–C_3 over C_5–C_6 rearrangements 10879
Flahive E. J. see Pettit G. R. 12097
Fleischhauer J. see Bringmann G. 7807
Fletcher W. Q. see Luis J. G. 10963
Fleury M. B. see Largeron M. 6307
Florio S. Epifani E. Ronzini L. Gasparri Fava G. Pelosi G. and Lucchini V. Stereoselective synthesis of 2-acyl-3,4-dihydro-1,4-benzothiazines 5037
Floris C. see Cabiddu S. 6037
Foces-Foces C. see Alcaraz C. 12443
Foces-Foces C. see Escolástico C. 12489
Focher F. see Botta M. 3603
Fogagnolo M. see Fantin G. 12973
Fogassy E. see Kozma D. 6907
Foley N. K. see McIntosh J. M. 1967
Fong S. T. see Coxon J. M. 13037
Fonseca I. see Pastor A. 8085
Font J. see Calderón A. 4201
Font-Bardía M. see Diez A. 6585
Forni A. Moretti I. Prati F. and Torre G. Stereochemical control in yeast reduction of fluorinated β-diketones 11995
Forns P. see Diez A. 6585
Forrest A. K. O'Hanlon P. J. and Walker G. The chemistry of pseudomonic acid—XIII. Modifications at C-12 to C-14 10739
Fort Y. Becker S. and Caubère P. A convenient synthetic route to bis-heteroaromatic and bis-heterocyclic compounds promoted by liganded nickel complex reducing agents 11893
Forti L. see Boni M. 7897
Fossli D.-J. see Waagen V. 10055
Foubelo F. Lloret F. and Yus M. β-Functionalised radicals in organic synthesis: 2-acyloxyalkyl radicals from 2-acyloxyalkyl iodides by the tin route 5131
Foubelo F. Lloret F. and Yus M. β-Acylvinyl intermolecular radical additions to double bonds: stereoselective synthesis of functionalised (*E*)-α,β-unsaturated carboxylic acids 6715
Foubelo F. see Almena J. 5775
Foubelo F. see Bachki A. 5139
Foucaud A. see Bauchat P. 7815
Fouquet E. see Boivin J. 1745
Fouquet E. see Boivin J. 1757
Fouquet E. see Boivin J. 1769
Fraga B. M. Hernández M. G. Arraez J. D. and Luis J. G. The transformation of epicandicandiol into a gibberellin A_{12} isomer 12643
Francesconi I. see Mischitz M. 8661
Frank H. see Lundt I. 13285
Franssen M. C. R. see Piet D. P. 3169
Frappier F. see Litaudon M. 5323
Freccero M. Mella M. and Albini A. The photochemical reactions of 9,10-anthracenedicarbonitrile and 1,4-naphthalenedicarbonitrile in acetonitrile in the presence of bases 2115
Freccero M. see Albini A. 575
Frederickson M. Grigg R. Redpath J. and Thornton-Pett M. Homochiral cycloadducts derived from sugar aldoximes via nitrone intermediates 5495
French S. A. see Neder K. M. 9847
Frenking G. Köhler K. F. and Reetz M. T. Conformational analysis of 2-chloro-2-fluoroacetaldehyde and calculated transition state structures of nucleophilic addition reactions 11197
Frenna V. Macaluso G. Vivona N. Spinelli D. Consiglio G. and Mezzina E. Mononuclear heterocyclic rearrangements. Effect of the structure of the side chain on the reactivity—III. Rearrangement of some *N*-(5-phenyl-1,2,4-oxadiazol-3-yl)-*N'*-arylformamidines into 1-aryl-3-benzoylamino-1,2,4-triazoles in acetonitrile in the presence of triethylamine 7315
Frenzen G. see Aurich H. G. 7417
Frenzen G. see Hoffmann R. W. 6049
Fresneda P. M. see Molina P. 2241
Fretwell P. see Grigg R. 359
Freudenreich J. see Knorr R. 5845
Freyer A. see Compagnone R. S. 12785
Friedrich D. see Paquette L. A. 4071
Frigerio M. see Arnone A. 12361
Frigerio M. see Arnone A. 13485
Fringuelli F. Pani G. Piermatti O. and Pizzo F. Condensation reactions in water of active methylene compounds with arylaldehydes. One-pot synthesis of flavonols 11499
Froen D. E. see Ager D. J. 1975
Froen D. E. see McIntosh J. M. 1967
Fröhlich K. see Seibel J. 715
Fronczek F. R. see Macías F. A. 5439
Fronza G. Fuganti C. Grasselli P. and Mele A. On the asymmetric dihydroxylation of (2*S*,3*R*) 5-phenylpent-4-en-2,3-diol derivatives 5021
Fronza G. Fuganti C. Mele A. Pedrocchi-Fantoni G. and Servi S. On the mechanism of baker's yeast mediated synthesis of (*R*) *S*-benzyl thioglycerate. Experiments in deuterated water 857
Frost C. G. see Allen J. V. 799
Fruzinski A. see Szechner B. 7611
Fuchs B. see Senderowitz H. 9691
Fuchs B. see Senderowitz H. 9707
Fuchs E. Krebs F. Heydt H. and Regitz M. Organophosphorus compounds—LX. Reactions of phosphatriafulvenes with nucleophilic partners 759
Fuganti C. see Fronza G. 857
Fuganti C. see Fronza G. 5021
Fuji K. see Mátyus P. 2405
Fujihira S. see Aoyagi Y. 13575
Fujii T. see Hirao T. 10207
Fujiwara T. see Sugiyama H. 1311
Fukuda Y. Itoh Y. Nakatani K. and Terashima S. Synthetic studies on duocarmycin—I. Total synthesis of *dl*-duocarmycin A and its 2-epimer 2793
Fukuda Y. Nakatani K. and Terashima S. Synthetic studies on duocarmycin—II. Synthesis and cytotoxicity of natural (+)-duocarmycin A and its three possible stereoisomers 2809
Fukui S. see Koike K. 12811

Fukumoto K. see Nemoto H. 10391
Fukumoto K. see Toyota M. 1093
Fukumoto K. see Toyota M. 3673
Fukumoto K. see Toyota M. 10183
Fukumoto K. see Toyota M. 11153
Fuller L. S. see Barcock R. A. 4149
Fülöp F. see Kóbor J. 4873
Furihata K. see Yun B.-S. 11659
Furlong M. see Duddu R. 2415
Furneaux R. H. Gainsford G. J. Mason J. M. and Tyler P. C.
The chemistry of castanospermine—I. Synthetic modifications at C-6 2131
Furneaux R. H. see Croucher P. D. 13299
Fürst J. see Brunner H. 4303
Furukawa H. see Mori Y. 11133
Furukawa T. see Ishikawa T. 9287
Furukawa Y. see Jacobsen E. N. 4323
Furuuchi T. see Moriya T. 7961
Fusetani N. Takahashi M. and Matsunaga S.
Topsentiasterol sulfates, antimicrobial sterol sulfates possessing novel side chains, from a marine sponge, *Topsentia* sp. 7765
Fusetani N. see Ryu G. 13409
Fusetani N. see Sata N. 1105
Fusetani N. see Tsukamoto S. 13583

Gabbutt C. D. Hartley D. J. Hepworth J. D. Heron B. M. Kanjia M. and Rahman M. M.
Synthesis and reactivity of some 4-bromo- 2*H*-chromenes and 2*H*-thiochromenes 2507
Gabbutt C. D. Hepworth J. D. Heron B. M. and Kanjia M.
Ring contraction of sulfenamides derived from thiochroman-4-ones 827
Gabbutt C. D. Hepworth J. D. and Heron B. M.
A new reaction of α-chloro-α-chlorosulfenyl ketones: facile syntheses of 3,3-dichloro- and 3-chlorochroman-4-ones and thiochroman-4-ones 5245
Gabbutt C. D. Hepworth J. D. and Heron B. M.
Synthesis and reactivity of some thiochroman-3,4-diones 7865
Gacs-Baitz E. Minuti L. and Taticchi A.
A new short synthetic approach to cyclopentaphenanthrenones 10359
Gago F. see Carceller R. 4995
Gainsford G. J. see Furneaux R. H. 2131
Galán R. H. see Collado I. G. 6433
Galarini R. see Balsamini C. 12375
Gałdecki Z. see Szechner B. 7611
Gale P. A. see Beer P. D. 931
Gallardo I. see Andrieux C. P. 6913
Gálvez J. A. see Cativiela C. 9837
Gambino J. Yang T.-F. and Wright G. E.
Identification of purine deoxyribonucleoside anomers by two dimensional NOESY NMR 11363
Gamper A. M. see Armesto X. L. 10509
Gandolfi R. see Rastelli A. 5561
Ganem B. see Meier R.-M. Meier 2715
Ganesh K. N. see Prakash T. P. 11699
Gant T. G. and Meyers A. I.
The chemistry of 2-oxazolines (1985–present) 2297
Gao F. see Avery M. A. 957
Gao Q. see Chen S.-H. 8633
Gao Q. Ishihara K. Maruyama T. Mouri M. and Yamamoto H.
Asymmetric hetero Diels–Alder reaction catalyzed by stable and easily prepared CAB catalysts 979
García B. see Cardona L. 5527
García C. see Cobo J. 10345
García H. Miranda M. A. Mojarrad F. and Sabater M.-J.
Involvement of oxirane intermediates in the electron transfer photo-oxygenation of 1,1- and 1,2-diarylethylenes sensitized by 2,4,6-triphenylpyrylium tetrafluoroborate 8773
García M. J. Rebolledo F. and Gotor V.
Lipase-catalyzed aminolysis and ammonolysis of β-ketoesters. Synthesis of optically active β-ketoamides 6935
García M. V. see Armesto X. L. 2265
García-Calvo-Flores F. see Santoyo-González F. 2877
García-Granados A. see Bretón J. L. 2917
García-Granados A. see Dueñas J. 10761
García-Mendoza P. see Santoyo-González F. 2877
García-Navío J. L. see Carceller R. 4995
García Ruano J. L. see Carreño M. C. 5013
García Ruano J. L. see Bueno A. B. 9355
García Ruano J. L. see Escribano A. 7567
Gardelli C. see Calvani F. 12999
Gardelli C. see Chini M. 1261
Garg N. Hossain N. Plavec J. and Chattopadhyaya J.
New synthesis of 3'-*C*-substituted-3'-nitromethyl-*ribo*-thymidines 4167
Garg N. Hossain N. and Chattopadhyaya J.
The synthesis of new 3'-bis-*C*-substituted-3'-deoxy-3'-dehydro[3.3.0]-α-fused thymidines by intramolecular radical trapping by tethered acetylenes 5273
Garlaschelli L. Pang Z. Sterner O. and Vidari G.
New indole derivatives from the fruit bodies of *Tricholoma sciodes* and *T. virgatum* 3571
Garlaschelli L. Toma L. Vidari G. and Colombo D.
Conformational studies and stereochemical assignments of the lactarane sesquiterpenes furoscrobiculin D and blennin D 1211
Garlyauskajte R. Yu. Sereda S. V. and Yagupolskii L. M.
The unusual reactivity of the mono- and bis-*N*-(trifluoromethylsulfonyl)-substituted azaanalogs of arenesulfonochlorides 6891
Garraffo H. M. Simon L. D. Daly J. W. Spande T. F. and Jones T. H.
cis- and *trans*-configurations of α,α'-disubstituted piperidines and pyrrolidines by GC–FTIR; application to decahydroquinoline stereochemistry 11329
Garratt P. J. Thorn S. N. and Wrigglesworth R.
Stereoisomerism in *N*-cyano-*O*-phenylisoureas and related compounds 12211
Garrido N. M. see Urones J. G. 10995
Garton D. see Sheehan S. K. 6155
Gasparri Fava G. see Florio S. 5037
Gassen M. see Bringmann G. 10245
Gatilov Y. V. see Tkachev A. V. 11459
Gaude D. see Baret P. 2077
Gavagnin M. see Guo Y. 13261
Gavaskar K. V. see Bailey W. F. 5957
Gaviña P. see Aurell M. J. 2571
Gawley R. E. and Zhang Q.
Search for configurationally

stable, aracemic α-amino organolithiums 6077
Geb J. see Waldmann H. 11865
Geen G. R. see Bell D. 6643
Geib S. J. see Zhang W. 12579
Geise H. J. see Peeters L. D. 11533
Gellerman G. Rudi A. and Kashman Y.
The biomimetic synthesis of marine alkaloid related pyrido- and pyrrolo-[2,3,4-*kl*]acridines 12959
Gellon G. see Baret P. 2077
Gelo-Pujic M. Antolic S. Kojic-Prodic B. and Sunjic V.
Correlation of the absolute conformation of *sec* alcohols derived from macrocyclic lactones of resorcylic acid and their stereoselective transacetylation in organic solvents by *Pseudomonas fluorescens* lipase 13753
Genêt J. P. Blart E. Savignac M. Lemeune S. Lemaire-Audoire S. Paris J.-M. and Bernard J.-M.
Practical palladium-mediated deprotective method of allyloxycarbonyl in aqueous media 497
Genêt J. P. see Blart E. 505
Gengyo K. see Satoh T. 11839
Gennari C. see Bernardi A. 1227
Gennari C. Fioravanzo E. Bernardi A. and Vulpetti A.
Origins of stereoselectivity in the addition of allyl- and crotylboronates to aldehydes: the development and application of a force field model of the transition state 8815
Gentile G. see Botta M. 3603
Georgieva A. Stanoeva E. Karamfilova K. Spassov S. Angelova O. Haimova M. De Kimpe N. and Boelens M.
Synthesis of 11*H*-4b,10b-dihydro[1]benzopyrano[4,3-*c*]isoquinoline-6,11-(5*H*)-diones and 13*H*-6c,12b-dihydronaphtho[1',2':5,6]-pyrano[4,3-*c*]isoquinoline-8,13(7*H*)-dione from homophthalic anhydride and *N*-(2-hydroxy-arylidene)-alkylamines 9399
Gesson J.-P. Jacquesy J.-C. and Renoux B.
Synthesis and cytotoxic activity of new 4'-deoxy C-3'-homo anthracyclines 1165
Geuder T. see Bringmann G. 9643
Ghelfi F. see Boni M. 7897
Ghiron C. see Banfi L. 11983
Ghosh C. see Ghosh C. K. 4905
Ghosh C. K. Bhattacharya K. and Ghosh C.
Benzopyrans—XXXIII. [4+2]Cycloaddition of *N,N*-dimethylhydrazones and anils of 2-unsubstituted and 2-methyl-4-oxo-4*H*-1-benzopyran-3-carboxaldehyde with *N*-phenylmaleimide 4905
Ghosh S. see Sarkar S. 921
Giacobbe R. A. see Schwartz R. E. 1675
Giacomelli G. see Conti S. 13493
Giacomelli G. see Cossu S. 5083
Giacometti A. De Lucchi O. Dilillo F. Cossu S. Peters K. Peters E.-M. and von Schnering H. G.
Synthetic equivalents to substituted acetylenes in cycloaddition reactions. Dienophilic reactivity of 2-methyl-, 2-phenyl- and 2,3-trimethylene-1,4-benzodithiins-1,4-tetroxides 7913
Giang L. T. see Fetter J. 4185
Gidwani R. M. see Lal B. 9167
Giese B. see Damm W. 7029
Giessner-Prettre C. see Sevin A. 5387
Gijsen H. J. M. Wijnberg J. B. P. A. van Ravenswaay C. and de Groot A.
Rearrangement reactions of aromadendrane derivatives. The synthesis of (+)-maaliol, starting from natural (+)-aromadendrene—IV 4733
Gijsen H. J. M. Wijnberg J. B. P. A. and de Groot A.
Thermal rearrangement of bicyclogermacrane-1,8-dione. Synthesis of humulenedione and (−)-cubenol, starting from natural (+)-aromadendrene—V 4745
Gil J. F. Ramón D. J. and Yus M.
Reductive cleavage of allylic ketals by an arene-catalysed lithiation: a simple and direct route to masked lithium homoenolates 3437
Gil J. F. Ramón D. J. and Yus M.
Intramolecular 1,6-hydride transfer in acyclic 1,6-diols: a mechanistic study 7307
Gil S. see Aurell M[a] J. 5109
Gilbert J. C. and Cousins K. R.
Theoretical and experimental studies of the 3-aza-Claisen rearrangement 10671
Gilbert J. C. and Selliah R. D.
Enantioselective synthesis of an *ent*-trichothecene 1651
Gilchrist T. L. Gonsalves A. M. d'A. R and Pinho e Melo T. M. V. D.
Diels–Alder reactions of 2-azadienes derived from cysteine and serine methyl esters and aldehydes 13709
Gillespie R. J. see Batchelor M. J. 809
Gillhouley J. G. see Shing T. K. M. 8685
Gillum A. M. see Musza L. L. 11369
Giomi D. see Nesi R. 9189
Giorgi R. see Pini D. 205
Giri C. see Pakrashi S. C. 12009
Girreser U. see Maercker A. 8019
Giumanini A. G. see Strazzolini P. 217
Glänzer B. I. see Csuk R. 1111
Glemarec C. see Rousse B. 1777
Glemarec C. see Rousse B. 8711
Glink P. T. see Crisp G. T. 2623
Glink P. T. see Crisp G. T. 3213
Gluzinski P. see Panfil I. 7219
Gmeiner P. and Bollinger B.
Asymmetric synthesis of β-aminotetralins by electrophilic amination 10909
Goda K. see Hatanaka Y. 8301
Godinho L. S. see Afonso C. M. 9671
Goeppel D. Münster I. and Brückner R.
The geometry of the carbanionic moiety influences the non-induced diastereoselectivity of the [2,3]-Wittig rearrangement of lithiated diallyl ethers 3687
Gogoll A. see Tanner D. 9797
Golec J. M. C. see Batchelor M. J. 809
Golender L. see Senderowitz H. 9691
Golender L. see Senderowitz H. 9707
Golik J. see Chen S.-H. 8633
Golsch D. see Adam W. 13113
Gómez A. see Urones J. G. 10791
Gómez G. see Caamaño O. 2175
Gómez Pérez B. see Urones J. G. 10995
Gómez P. M. see Urones J. G. 10995
Gómez-Sal P. see Carceller R. 4995
Gomi K. see Katoh T. 6259
Gonda A. see Morita H. 6797
Gonda A. see Morita H. 9975
Gonsalves A. M. d'A. R see Gilchrist T. L. 13709
González A. G. see Estévez-Braun A. 5203
González A. G. see Luis J. G. 1217
González-Cameno A. M. Badía D. Domínguez E. Urtiaga M. K. Arriortua M. I. and

Solans X.
Preparation of a 3-phenyl-4(3*H*)-isoquinolinone and its transformation in 12(11*H*)-benzo[*c*]phenanthridinone derivatives. Crystal structure determinations 10971
Goodman J. M. see Bernardi A. 1227
Goodwin C. A. see Elgendy S. 3803
Goodwin C. J. see Bunnage M. E. 3975
Gopalakrishnan M. see Gurumurthy R. 13731
Gopalakrishnan M. see Sabapathy Mohan R. T. 10933
Gopalakrishnan M. see Sabapathy Mohan R. T. 10945
Gopalan A. S. see Koshti N. 2657
Gorbics L. see Urge L. 2373
Gorokhova O. V. see Ukrainets I. V. 10331
Gospodova T. S. see Viteva L. Z. 7193
Gotor V. see García M. J. 6935
Gotor V. see Morís F. 6927
Gotsens T. see Lavilla R. 5233
Götz R. see Bringmann G. 9643
Gould S. J. see Nowak-Thompson B. 9865
Goument B. Duhamel L. and Mauge R.
Asymmetric syntheses of (*S*)-fenfluramine using Sharpless epoxidation methods 171
Gourdoupis C. G. see Kotzamani H. K. 10477
Goux C. Lhoste P. and Sinou D.
Palladium(0)-catalyzed alkylation of thiols 10321
Graczyk G. see Urge L. 2373
Grand E. see Lubineau A. 10265
Grandas A. see Montserrat F. X. 2617
Grande M. T. see Pérez J. M. 7923
Grandi T. see Balbi A. 4009
Grassberger M. A. see Zimmer R. 13655
Grasselli P. see Fronza G. 5021
Grawe D. see Schwarz S. 10709
Green D. Patel G. Elgendy S. Baban J. A. Claeson G. Kakkar V. V. and Deadman J.
The synthesis of 1-aminobenzylphosphonic acids from benzylidenediphenylmethylamines, for use as structural units in antithrombotic tripeptides 5099
Green D. see Elgendy S. 3803
Greger H. see Hinterberger S. 6279
Gridnev I. D. see Nenajdenko V. G. 11023
Grierson D. S. see Audrain H. 1469
Grierson D. S. see Diez A. 6585
Griesbeck A. G. Henz A. Hirt J. Ptatschek V. Engel T. Löffler D. and Schneider F. W.
Photochemistry of N-phthaloyl derivatives of electron-donor-substituted amino acids 701
Grigg R. see Aly M. F. 895
Grigg R. see Ardill H. 5067
Grigg R. see Frederickson M. 5495
Grigg R. Fretwell P. Meerholtz C. and Sridharan V.
Palladium catalysed synthesis of spiroindolines 359
Grigg R. Kennewell P. and Savic V.
Palladium catalysed cross-coupling of vinyl triflates with 9-alkyl-9-borobicyclo[3,3,1]-nonanes. Total synthesis of (–)-isoseiridine 5489
Grillo T. A. see Luis J. G. 10963
Grisenti P. see Ferraboschi P. 10539
Grisenti P. see Ferraboschi P. 3251
Grisoni S. see Peyronel J.-F. 189
Grissom J. W. Calkins T. L. Huang D. and McMillen H.
High temperature radical cyclization anomalies in the tandem enediyne–bis-radical cyclization 4635
Grob A. see Eustache J. 6271
Grosjean F. Huché M. Larchevêque M. Legendre J. J. et Petit Y.
Etude par la modélisation moléculaire de la régiosélectivité de l'ouverture des acides glycidiques par les amines aliphatiques 9325
Grossi L.
The photochemically induced oxidation of aniline by hydroperoxides: an electron paramagnetic resonance study—II 9511
Grossman R. B. and Ley S. V.
Chemistry of insect antifeedants from *Azadirachta indica*—XVI. Synthesis of several derivatives of azadirachtin containing fluorescent or immunogenic reporter groups 8871
Grossman R. B. and Ley S. V.
Chemistry of insect antifeedants from *Azadirachta indica*—XVII. Synthesis of model compounds of azadirachtin. Unusual effect of remote substituents on the course of the oxidative ring contraction reaction 11553
Grosz A. L. see Ye M. 6109
Grouiller A. see Martin X. 6689
Grovenstein Singh J. Patil B. B. and VanDerveer D.
Carbanions—XXVII. Rearrangements of (9-alkyl-9-fluorenyl)-methyllithium (or cesium) and 2,2-diphenyl-3,3-dimethylbutyllithium 5971
Grundler C. see Bull J. R. 6347
Grzejszczak S. see Mikołajczyk M. 8053
Grzelak D. see Heuer M. 2029
Guagnano V. see Menicagli R. 1871
Guanti G. see Banfi L. 11967
Guanti G. see Banfi L. 11983
Guanti G. Banfi L. Merlo V. and Narisano E.
Regiocontrol in reductive ring opening of epoxides derived from asymmetrized 2-alkenyl-1,3-propanediols 2219
Guanti G. Banfi L. and Riva R.
Regioselective synthesis of 1,8-dihydroxytetralins through a tandem reduction/intramolecular hydroxyalkylation of 4-(3-hydroxyphenyl)alkanoates 11945
Guanti G. Merlo V. and Narisano E.
Regiocontrol in nucleophilic ring opening of chiral epoxides of chemoenzymatic origin 12245
Gubelmann M. see Imhaoulène S. 12913
Guedj R. see Agrofoglio L. 10611
Guérin B. see Voyer N. 989
Guerrero A. see Feixas J. 8539
Guerrero A. see Villuendas I. 12673
Guerrini R. see Fantin G. 12973
Guijarro A. and Yus M.
Arene-catalysed lithiation of 1,4-dichlorobut-2-enes and 3,4-dichlorobut-1-ene and reaction with electrophiles: a common reaction pathway 7857
Guijarro A. and Yus M.
1,3-Dichloropropene as a source of the 1,3-dianion derived from propene: synthesis of unsaturated 1,5-diols and dihydropyrans 13269
Guijarro D. Guillena G. Mancheño B. and Yus M.
Direct transformation of dialkyl sulfates into alkyllithium reagents by a naphthalene-catalysed lithiation 3427
Guijarro D. Mancheño B. and Yus M.
Direct transformation of trialkyl phosphates into organolithium

compounds by a DTBB-catalysed lithiation 8551
Guijarro D. and Yus M. Organolithium reagents by reductive decyanation of nitriles with lithium and a catalytic amount of 4,4'-di-*tert*-butyl-biphenyl in a Barbier-type reaction 3447
Guillaumet G. see Moreau P. 3407
Guillena G. see Guijarro D. 3427
Guiry P. J. see Brown J. M. 4493
Guisnet M. see Imhaoulène S. 12913
Guitián E. see Atanes N. 11257
Guittet E. see Krief A. 7177
Gulden K.-P. see Bringmann G. 2831
Gulden K.-P. see Bringmann G. 7807
Gullón F. see Lavilla R. 5233
Gunatilaka A. A. L. see Dagne E. 5615
Gundersen L.-L. Bakkestuen A. K. Aasen A. J. Øverås H. and Rise F. 6-Halopurines in palladium-catalyzed coupling with organotin and organozinc reagents 9743
Günther H. see Bergander K. 5861
Guo Y. Gavagnin M. Trivellone E. and Cimino G. Absolute stereochemistry of petroformynes, high molecular polyacetylenes from the marine sponge *Petrosia ficiformis* 13261
Gupta A. D. Bhuniya D. and Singh V. K. Synthesis of homochiral bis(oxazolinyl) pyridine type ligands for asymmetric cyclopropanation reactions 13725
Gupta B. D. see Roy S. 1847
Gupta S. see Prasad A. K. 10579
Gupta S. see Prasad A. K. 2231
Gupton J. T. see Petrich S. A. 12113
Gurumurthy R. Gopalakrishnan M. and Sathiyanarayanan K. I. Kinetics and mechanism of oxidation of S-phenylthioacetic acids by Ce(IV) 13731
Gutsche C. D. see Sharma S. K. 4087
Guy R. G. see Atkins E. F. 7253
Guyot M. see Litaudon M. 5323
Guzaev A. see Hovinen J. 7203
Guzmán J. see Farfán N. 9951
Guzzo P. R. Teng M. and Miller M. J. Syntheses of novel bicyclic β-lactams by intramolecular nucleophile transfer reactions of *N*-tosyloxy β-lactams 8275
Guzzo P. R. and Miller M. J. Reactions of *N*-chloro β-lactams 11091

Haaima G. Hanton L. R. Lynch M.-J. Mawson S. D. Routledge A. and Weavers R. T. Photoisomerisation of (*E*)-iodoalkylidene lactones. A route to (*Z*)-iodoalkylidene lactones 2161
Haaima G. Mawson S. D. Routledge A. and Weavers R. T. Reaction of iodoalkylidene lactones with nucleophiles 3557
Haasnoot J. G. see Jungk D. 11187
Habraken C. L. see Lammers H. 865
Hachiya I. see Kobayashi S. 11623
Hackinger A. see Mischitz M. 8661
Hadj-Abo F. Bienz S. and Hesse M. Synthesis of [10]heterophanes using a ring enlargement reaction 8665
Hadjiarapoglou L. see Adam W. 13113
Hahn J. see Jungk D. 11187
Haidl E. see Zimmer R. 13655
Haïdour A. see Barrero A. F. 6653
Haigh D. Rhodium carbenoid O–H insertion reactions with phenols; a facile method for the synthesis of trialkyl 2-aryloxyphosphonoacetates and their use in the preparation of 2-aryloxy-3-phenylpropanoates 3177
Haight A. R. see Krysan D. J. 6163
Haimova M. see Georgieva A. 9399
Hajipour A. R. see Pyne S. G. 13501
Hale K. J. Manaviazar S. and Delisser V. M. A practical new asymmetric synthesis of (2*S*,3*S*)- and (2*R*,3*R*)-3-hydroxyleucine 9181
Haley M. M. see Billups W. E. 10693
Hallberg A. see Engman L. 2929
Hallberg A. see Larhed M. 285
Hallock Y. F. see Bringmann G. 7807
Hallock Y. F. see Bringmann G. 9643
Halut S. see Farfán N. 9951
Hamada T. see Sasaki H. 11827
Hamada Y. see Matsuura F. 11303
Hamada Y. see Matsuura F. 265
Hamada Y. see Matsuura F. 9457
Hamann M. T. see Yeung B. K. S. 12593
Hamano K. see Yoda K. 6537
Hamashima H. see Sawamura M. 4439
Hamdan M. see Balsamini C. 12375
Hammerschmidt F. and Li Y.-F. Determination of absolute configuration of α-hydroxyphosphonates by ^{31}P NMR spectroscopy of corresponding Mosher esters 10253
Hamon L. Levisalles J. and Pascal Y.-L. Etude théorique de la pyrolyse des esters—II. Influence de substituants sur les processus d'élimination et de retour interne 161
Hanefeld W. and Jung M. Synthesis of pentacyclic retinoids 2459
Hanessian S. Hori H. Tu Y. and Boulanger Y. Conformational analysis of the carbohydrate portion of T and T_N haptens by NMR spectroscopy and molecular modeling 77
Hanhinen P. see Lounasmaa M. 9207
Hanquet G. et Lusinchi X. Action d'un tétrafluoroborate d'oxaziridinium sur les amines et les imines 12185
Hansen L. K. see Waagen V. 10055
Hanton L. R. see Haaima G. 2161
Happel M. see Marzian S. 5299
Haque M. R. and Rasmussen M. Ambident heterocyclic reactivity: alkylation of 2-substituted-4-methylbenzimidazoles 5535
Harada N. see Ohta T. 5659
Harada S. see Saito N. 3915
Harada T. Katsuhira T. Hattori K. and Oku A. Stereochemistry in carbenoid formation by bromine/lithium and bromine/zinc exchange reactions of *gem*-dibromo compounds 7987
Harada T. Ohseto F. and Shinkai S. Combined NMR spectroscopy and molecular mechanics studies of OH-depleted calix[4]arenes: on the influence of OH groups on the relative stability of

calix[4]arene conformers 13377
Harano K. see Eto M. 13395
Harayama T. see Ishikawa T. 9287
Hareau G. see Bury P. 8793
Hariharan S. see Kodukulla R. P. K. 4623
Harmatha J. see Píš J. 9679
Harmsen S. see Bringmann G. 9643
Harring S. R. and Livinghouse T.
Polyene cascade cyclizations mediated by $BF_3{\cdot}CH_3NO_2$. An unusually efficient method for the direct, stereospecific synthesis of polycyclic intermediates via cationic initiation at non-functionalized 3° alkenes. An application to the total synthesis of (±)-taxodione 9229
Hartley D. J. see Gabbutt C. D. 2507
Hartopp P. see Cotterill A. S. 7657
Hartung T. see Bringmann G. 2831
Haruyama H. see Yoda K. 6537
Harverson P. see Constable E. C. 7799
Harvey R. G. see Blum J. 8505
Harwood J. S. see Jacyno J. M. 11585
Hasegawa E. see Kamata M. 12821
Hasegawa H. see Itoh T. 13089
Hashimoto H. see Hiruma K. 12143
Hashimoto M. see Akiba T. 3905
Hashimoto M. see Tamura O. 3889
Hashimoto Y. Sato Y. Takeshita N. Kudo K. and Saigo K.
Remote asymmetric induction using neighboring group participation of a sulfenyl group 8317
Hashizume K. see Inoue S. 2729
Hassan A. A. Mohamed N. K. Ali B. A. and Mourad A.-F. E. 9997
Novel heterocyclics from 3-substituted-5*H*-1,2,4-triazino[5,6-*b*]indoles and π-acceptors
Hassan A. E. A. Shuto S. and Matsuda A.
Nucleosides and nucleotides—CXXIV. Chemical reactivity of the sugar moiety of 2'-deoxy-2'-methylidene pyrimidine nucleosides: synthesis of 3'-amino-2',3'-dideoxy-2'-methylidene pyrimidine nucleosides via [2,3]-sigmatropic rearrangement of allylic selenides as potential antitumor agents 689
Hatakeyama S. Irie H. Shintani T. Noguchi Y. Yamada H. and Nishizawa M.
An efficient route to a key A-ring synthon for 1α,25-dihydroxyvitamin D_3 and its analogs 13369
Hatanaka Y. Goda K. Okahara Y. and Hiyama T.
Highly selective cross-coupling reactions of aryl(halo)silanes with aryl halides: a general and practical route to functionalized biaryls 8301
Hatayama A. see Hosoya N. 4311
Hattori K. see Harada T. 7987
Hattori K. and Yamamoto H.
Practical preparation of α-hydroxy-β-amino ester units; stereoselective synthesis of taxol side chain and norstatine 2785
Hattori K. and Yamamoto H.
Highly selective enolization method for heteroatom substituted esters; its application to the Ireland ester enolate Claisen rearrangement 3099
Hattori M. see Meselhy M. R. 3081
Hayakawa I. see Akiba T. 3905
Hayakawa I. see Tamura O. 3889
Hayashi K. see Narasaka K. 4529
Hayashi M. Inoue T. Miyamoto Y. and Oguni N.
Asymmetric carbon–carbon bond forming reactions catalyzed by chiral Schiff base–titanium alkoxide complexes 4385
Hayashi M. Yoshiga T. Nakatani K. Ono K. and Oguni N.
Reduction of α-trialkylsiloxy nitriles with diisobutylaluminium hydride (DIBAH): a facile preparation of α-trialkylsiloxy aldehydes and their derivatives 2821
Hayashi T. see Matsumoto Y. 335
Hayashi T. see Uozumi Y. 4293
Hayashi Y. see Narasaka K. 4529
Hayashida O. Matsuura S. and Murakami Y.
Specific molecular recognition by cage-type cyclophanes having a helically twisted and cylindrical internal cavity 13601
Hazra B. G. Joshi P. L. Bahule B. B. Argade N. P. Pore V. S. and Chordia M. D.
Stereoselective synthesis of (22*R*,23*R*,24*S*)-3β-hydroxy-5-ene-22,23-dihydroxy-24-methyl-cholestane: a brassinolide intermediate from 16-dehydropregnenolone acetate 2523
He R. see Bergander K. 5861
Head J. C. see Saville-Stones E. A. 6695
Hecquet L. Bolte J. and Demuynck C.
Chemoenzymatic synthesis of 6-deoxy-D-fructose and 6-deoxy-L-sorbose using transketolase 8677
Hedenström E. and Högberg H.-E.
Efficient opening of *trans*-2,3-epoxybutane by a higher order cuprate: synthesis of *erythro*-3,7-dimethyl-pentadecan-2-yl acetate, pheromone of pine sawflies 5225
Hedgecock C. J. R. see Batchelor M. J. 809
Heinemann F. see Heuer M. 2029
Heller D. see Börner A. 10419
Helmchen G. see Kiefer M. 7109
Helms G. L. see Schwartz R. E. 1675
Hemamalini P. see Srikrishna A. 8781
Hemling M. E. see Compagnone R. S. 12785
Hendrickson T. F. see Avery M. A. 957
Hénin F. M'Boungou-M'Passi A. Muzart J. and Pète J.-P.
Photoreactivity of α-tetrasubstituted arylketones: production and asymmetric tautomerization of arylenols 2849
Henry C. and Brook M. A.
Proton addition to silylstyrenes: overcoming the predilection for protiodesilylation 11379
Henz A. see Griesbeck A. G. 701
Hepworth J. D. see Gabbutt C. D. 2507
Hepworth J. D. see Gabbutt C. D. 5245
Hepworth J. D. see Gabbutt C. D. 7865
Hepworth J. D. see Gabbutt C. D. 827
Herald D. L. see Pettit G. R. 12097
Herczegh P. Kovács I. Szilágyi L. Sztaricskai F. Berecibar A. Riche C. Chiaroni A. Olesker A. and Lukacs G.
Cycloaddition reactions of carbohydrate derivatives—V. A hetero Diels–Alder approach to swainsonine analogs 13671

Herdewijn P. see Augustyns K. 1189
Herdewijn P. see Pannecouque C. 7231
Herlem D. Khuong-Huu F. and Kende A. S.
Studies toward the total synthesis of diterpenes in the labdane series—III. Synthesis of two epimeric 6,7,8-trihydroxylabdadienes 2055
Hernáiz M. J. Sánchez-Montero J. M. and Sinisterra J. V.
Comparison of the enzymatic activity of commercial and semipurified lipase of *Candida cylindracea* in the hydrolysis of the esters of (*R,S*) 2-aryl propionic acids 10749
Hernández M. G. see Fraga B. M. 12643
Hernández-Fuentes I. see Moreno-Mañas M. 11213
Hernández-Galán R. see Collado I. G. 10531
Hernández-Mateo F. see Santoyo-González F. 2877
Hernández-Ortega S. see Esquivel B. 11593
Heron B. M. see Gabbutt C. D. 827
Heron B. M. see Gabbutt C. D. 2507
Heron B. M. see Gabbutt C. D. 5245
Heron B. M. see Gabbutt C. D. 7865
Hesse M. see Hadj-Abo F. 8665
Heuer M. Hohgardt K. Heinemann F. Kühne H. Dietrich W. Grzelak D. Müller D. Welzel P. Markus A. van Heijenoort Y. and van Heijenoort J.
Structural analogues of the antibiotic moenomycin A with a D-glucose-derived unit F 2029
Heumann A. Kaldy S. and Tenaglia A.
Direct access to substituted brendane derivatives by palladium–copper mediated cyclisation of *endo*-5-vinyl-2-norbornene. X-Ray structure of the σ–π intermediate palladium complex. Further evolution (Baeyer–Villiger oxidation) to the quinane system 539
Hewkin C. T. see Bernardi A. 1227
Heydt H. see Fuchs E. 759
Hidaka T. see Yun B.-S. 11659
Hiemstra H. see Lolkema L. D. M. 7115
Hiemstra H. see Lolkema L. D. M. 7129
Hiemstra H. see Pirrung F. O. H. 12415
Hiemstra H. see Udding J. H. 1907
Hiemstra H. see Udding J. H. 8853
Higa T. see Tanaka J. 9989
Higashiyama K. Inoue H. and Takahashi H.
Diastereoselective addition of chiral imines and 1,3-oxazolidines with Grignard reagents; asymmetric synthesis of (*R*)-2-aryl- and (*R,R*)-2,5-bis(aryl)pyrrolidines 1083
Hildebrand D. see Bracher F. 12329
Hilhorst E. Chen T. B. R. A. Iskander A. S. and Pandit U. K.
Dealkylation of quaternary ammonium salts by thiolate anions: a model of the cobalamin-independent methionine synthase reaction 7837
Hilhorst E. Iskander A. S. Chen T. B. R. A. and Pandit U. K.
Alkyl transfer from quaternary ammonium salts to cobalt (I): model for the cobalamin-dependent methionine synthase reaction 8863
Hill D. R. see Barton D. H. R. 2665
Hill J. P. see Milgrom L. R. 13477
Hillegass K. see Ye M. 6109
Hillier M. C. see Dussault P. H. 8929
Hinterberger S. Hofer O. and Greger H.
Synthesis and corrected structures of sulphur-containing amides from *Glycosmis* species: sinharines, penimides and illukumbins 6279
Hirama M. see Takahashi K. 1327
Hirano T. see Mikami K. 5917
Hirao T. Fujii T. and Ohshiro Y.
Versatile desilylative cross-coupling of silyl enol ethers and allylic silanes via oxovanadium-induced chemoselective one-electron oxidation 10207
Hirosawa C. see Toshimitsu A. 8997
Hirota H. see Tsukamoto S. 13583
Hirsh K. A. see Ye M. 6109
Hirt J. see Griesbeck A. G. 701
Hiruma K. Tamura J. Horito S. Yoshimura J. and Hashimoto H.
Convenient synthesis of pyruvate acetals of carbohydrates by coupling of trialkylsilylated diols and pyruvates 12143
Hiyama T. see Hatanaka Y. 8301
Hizi A. see Talpir R. 4179
Ho D. M. see Pascal, Jr R. A. 8559
Hockless D. C. R. see Pyne S. G. 941
Hocquaux M. see Tournaire C. 9303
Hodgson J. E. see Lawlor E. J. 8737
Hodson H. F. Madge D. J. Slawin A. N. Z. Widdowson D. A. and Williams D. J.
Electrophilic fluorination in the synthesis of new fluoroindoles 1899
Hoehn-Berlage M. see Bockhorst K. 8657
Hofer O. see Hinterberger S. 6279
Hoffmann N. see Brunne J. 6819
Hoffmann N. Buschmann H. Raabe G. and Scharf H.-D.
Chiral induction in photochemical reactions—XV. Detection of stereoelectronic effects by temperature dependent measurements of the diastereo-selectivity in the photosensitized [2+2]-cycloaddition 11167
Hoffmann P. see Lesueur C. 5369
Hoffmann R. W. Julius M. Chemla F. Ruhland T. and Frenzen G.
Configurational stability of chiral organolithium compounds on the time scale of their addition to aldehydes 6049
Hoffmann U. see Damm W. 7029
Hofmann G. A. see Compagnone R. S. 12785
Hofmann G. A. see Dagne E. 5615
Höfner G. see Wünsch B. 8003
Högberg H.-E. see Hedenström E. 5225
Hoge G. see Zhang W. 12579
Hogg D. J. P. North M. and Stokoe R. B.
A conformational comparison of cyclo-[(*S*)-His-(*S*)-Leu] and cyclo-[(*S*)-His-(*S*)-Phe], catalysts for the asymmetric addition of HCN to aldehydes 7933
Hohgardt K. see Heuer M. 2029
Hökelek T. see Atasoy B. 5753
Hökelek T. see Dastan A. 10555
Holder A. J. Dennington, II R. D. and Jie C.
Addendum to SAM1 results previously published 627
Holenz J. see Bringmann G. 9643
Holland A. K. see Farr R. A. 1033

Holland S. see Lawlor E. J. 8737
Holz J. see Börner A. 10419
Hoornaert G. J. see Saleh M. A. 1811
Hoornaert G. J. see Van Aken K. J. 5211
Hope H. see Perry N. B. 3987
Hopkins P. B. see Sigurdsson S. Th. 12065
Hoppe D. see Carstens A. 6097
Hori H. see Hanessian S. 77
Hori K. see Kamimura A. 7969
Horibe M. see Kobayashi S. 9629
Horito S. see Hiruma K. 12143
Horwell D. C. Lennon I. C. and Roberts E.
A facile method to append peptidal side-chains onto steroidal templates 4225
Hosono F. Nishiyama S. Yamamura S. Izawa T. Kato K. and Terada Y.
Enantiospecific synthesis of [(2'*S*,3'*S*)-bis(hydroxymethyl)-azetidin-1-yl] pyrimidine nucleosides as potential antiviral agents 13335
Hosoya N. see Noda K. 9609
Hosoya N. Hatayama A. Irie R. Sasaki H. and Katsuki T.
Rational design of Mn–salen epoxidation catalysts: preliminary results 4311
Hosoyama H. see Kobayashi J. 7401
Hossain N. see Garg N. 4167
Hossain N. see Garg N. 5273
Hosztafi S. see Simon C. 9757
Houck M. A. see McCormick K. D. 2365
Hough E. see Waagen V. 10055
Houk K. N. see Mikami K. 5917
Hovinen J. Guzaev A. Azhayev A. and Lönnberg H.
Novel solid supports for the preparation of 3'-derivatized oligonucleotides: introduction of 3'-alkylphosphate tether groups bearing amino, carboxy, carboxamido and mercapto functionalities 7203
Howard S. see Krygowski T. M. 13155
Howie R. A. see Melguizo M. 13511
Hoyos M. A. see Bueno A. B. 9355
Hruby V. J. see Boteju L. W. 2391
Hu Z. see Csuk R. 1111
Hua Y. see Zhang W. 12579
Huang D. see Grissom J. W. 4635
Huang S. see Chen S.-H. 8633
Huang W.-Y. see Wang J.-S. 10459
Huber E. W. see Farr R. A. 1033
Huber V. see Koshti N. 2657
Huché M. see Grosjean F. 9325
Hudhomme P. see Boussoufi A. 12609
Huet F. see Mévellec L. 13145
Huffman J. C. see O'Donnell M. J. 4507
Hulmes D. I. see Brown J. M. 4493
Hulst R. de Vries N. K. and Feringa B. L.
The rational design and application of new chiral phosphonates for the enantiomeric excess determination of unprotected amino acids. Remarkable pH dependency of the diastereomeric shift differences 11721
Hundt A. F. see Rossouw W. 12477
Hung C.-Y. Wang T.-L. Shi Z. and Thummel R. P.
A Friedländer approach to novel 1,10-phenanthrolines and their use as ligands for Ru(II) and Cu(I) 10685
Hunter L. M. see Rodríguez J. 11079
Hunter R. Michael J. P. Simon C. D. and Walter D. S.
Allylation with Pummerer-generated substituted vinylthionium ions 9365
Hunter R. Michael J. P. and Tomlinson G. D.
Allylation using allylborates 871
Hunter R. Michael J. P. and Walter D. S.
Allylation with substituted vinylthionium ions from $SnCl_4$-Ionisation of 1,3- and 3,3-bis(alkyl/phenylthio)propenes 9377
Huo S. Q. Wu Y. J. Mao X. A. and Yuan H. Z.
Synthesis and mercuration of anils of benzoylferrocene 10467
Husbands S. Suckling C. A. and Suckling C. J.
Latent inhibitors—X. The inhibition of carboxypeptidase A by tetrapeptide analogues based on 1-aminocyclo-propane carboxylic acid 9729
Hussain B. A. W. see Elgemeie G. E. H. 199
Husson H.-P. see Diez A. 6585
Husson H.-P. see Yue C. 3139
Hutchinson K. D. Silverton J. V. and Daly J. W.
Synthesis of pyrrolizidine oximes 222 and 236: novel alkaloids of a dendrobatid poison frog 6129
Hutton C. A. see Easton C. J. 7327
Hwang K.-O. Anstine D. T. and Lightner D. A.
Synthesis and properties of bilirubin analogs with *N,N*-methylene bridges 9919
Hwang K.-O. and Lightner D. A.
Synthesis and spectroscopic properties of *N,N*-bridged dipyrrinones 1955
Hyk J. see Píš J. 9679
Hynninen P. H. see Tauber A. Y. 4723

Ianelli S. see Caubère C. 11903
Ianelli S. see Caubère C. 13433
Ibarzo J. and Ortuño R. M.
1,2-Dibromoethane in the synthesis of 2-bromoesters: bromination versus alkylation 9825
Ibrahim Y. A. Elwahy A. H. M. and Abbas A. A.
New synthesis of macrocyclic crown-formazans from pyruvic acid derivatives 11489
Ichihara A. see Oikawa H. 13347
Ichihara O. see Bunnage M. E. 3975
Ichikawa J. Kobayashi M. Yokota N. Noda Y. and Minami T.
Reaction of 2,2-difluorovinyl ketones with heteroatom nucleophiles: a general one-pot synthesis of α-oxoketene acetals 11637
Ichikawa Y. see Naganawa A. 8969
Igarashi T. see Tomooka K. 5927
Ignatchenko A. V. see Katritzky A. R. 6005
Iino T. Yoshimura Y. and Matsuda A.
Nucleosides and nucleotides—CXXXIV. Synthesis of 2'-*C*-alkynyl-2'-deoxy-1-β-D-arabinofuranosyl-pyrimidines via radical deoxygenation of *tert*-propargyl alcohols in the sugar moiety 10397
Ikeda M. see Ishibashi H. 10215
Ikeuchi F. see Katoh T. 6259
Ila H. see Patro B. 255
Ila H. see Rao Ch. S. 5783
Imada N. see Ishibashi H. 10215
Imada Y. see Murahashi S.-I. 453
Imamura A. see Sugihara Y. 6495
Imamura H. see Murakami N. 1993
Imaoka I. see Takeda K. 10839
Imbach J.-L. see Serra C. 8427
Imhaoulène S. Vivier L. Guisnet M. Pérot G. and Gubelmann M.
Exchange of halogens between aromatic compounds

in the presence of Cu–HZSM-5 zeolite 12913
Inagaki H. see Niwa H. 7385
Inariyama T. see Aoyagi Y. 13575
Inazumi T. see Kuroki Y. 1063
Incze M. see Sóti F. 8209
Inman W. D. see Avery M. A. 957
Ino A. see Nishikawa T. 1449
Inoue H. see Higashiyama K. 1083
Inoue I. Shindo M. Koga K. and Tomioka K. Asymmetric 1,2-addition of organolithiums to aldimines catalyzed by chiral ligand 4429
Inoue M. see Koike K. 12811
Inoue S. Okada K. Tanino H. Hashizume K. and Kakoi H. Total synthesis of (±)-surugatoxin 2729
Inoue S. Okada K. Tanino H. and Kakoi H. Total synthesis of neosurugatoxin 2753
Inoue T. see Hayashi M. 4385
Inoue T. see Nishide K. 8337
Inoue Y. see Yoshikawa M. 9619
Inoue Y. see Yoshikawa M. 9961
Iqbal J. see Maikap G. C. 9145
Iranpoor N. and Mothaghineghad E. Cerium(IV) as a selective and efficient catalyst for alcoholyses of allylic and tertiary benzylic alcohols 1859
Iranpoor N. and Mottaghinejad E. Catalytic and efficient cleavage of allylic and tertiary benzylic ethers and esters with Ce(IV) 7299
Irie H. see Hatakeyama S. 13369
Irie R. see Hosoya N. 4311
Irie R. see Noda K. 9609
Irie R. see Sasaki H. 11827
Isac-García J. see Santoyo-González F. 2877
Isami T. see Yamashita T. 9275
Isecke R. and Brossmer R. Synthesis of 5-*N*- and 9-*N*-thioacylated sialic acids 7445
Ishibashi H. Takagaki K. Imada N. and Ikeda M. Total synthesis of (±)-clavizepine 10215
Ishibashi M. see Doi Y. 8651
Ishibashi M. see Kondo K. 8355
Ishibashi M. see Zhang H. 10201
Ishihara K. see Gao Q. 979
Ishii F. see Okada Y. 12159
Ishii H. see Ishikawa T. 9287
Ishii H. see Shimizu I. 487
Ishikawa T. Koseki N. Furukawa T. Sakurada E. Koseki C. Saito Y. Ogata K. Harayama T. and Ishii H. Photochemistry of 2-(3,4,5-trimethoxyphenyl)-4-(3,4-methylenedioxyphenyl)-4-oxo-2-butenonitrile (β-cyanochalcone) and its related compounds 9287
Ishitani H. see Kobayashi S. 11623
Ishiwata H. Sone H. Kigoshi H. and Yamada K. Enantioselective total synthesis of doliculide, a potent cytotoxic cyclodepsipeptide of marine origin and structure–cytotoxicity relationships of synthetic doliculide congeners 12853
Iskander A. S. see Hilhorst E. 7837
Iskander A. S. see Hilhorst E. 8863
Isobe M. see Naganawa A. 8969
Isobe M. see Nishikawa T. 1449
Isobe M. see Nishikawa T. 5621
Isobe M. see Okita T. 11143
Isobe M. see Tanaka S. 12883
Isobe M. see Tanaka S. 5633
Ito Y. see Matsumoto Y. 335
Ito Y. see Sawamura M. 4439
Itoh N. see Satoh T. 11839
Itoh T. Hasegawa H. Nagata K. Okada M. and Ohsawa A. A new entry to the ethynylation of azaaromatics using bis(tributylstannyl)-acetylene in the presence of alkyl chloroformate 13089
Itoh Y. see Fukuda Y. 2793
Itokawa H. see Morita H. 11613
Itokawa H. see Morita H. 12599
Itokawa H. see Morita H. 6797
Itokawa H. see Morita H. 9975
Ivanov C. see Bojilova A. 13023
Ivory A. J. see Black D. St. C. 10497
Iwasaki S. see Kobayashi J. 7401
Iyengar D. S. see Rama Devi A. 2543
Izatt R. M. see Dalley N. K. 2721
Izawa T. Nishiyama S. and Yamamura S. Total syntheses of makaluvamines A, B, C, D and E, cytotoxic pyrroloiminoquinone alkaloids isolated from marine sponge bearing inhibitory activities against topoisomerase II 13593
Izawa T. see Hosono F. 13335
Izquierdo M. L. see Carceller R. 4995

Jackman L. M. see Ye M. 6109
Jackson D. C. see Urge L. 2373
Jackson W. R. see Campi E. M. 2533
Jackson W. R. see Brown R. F. C. 13739
Jackson W. R. see Brown R. F. C. 5469
Jacobs S. G. see Peeters L. D. 11533
Jacobsen E. N. Deng L. Furukawa Y. and Martínez L. E. Enantioselective catalytic epoxidation of cinnamate esters 4323
Jacquesy J.-C. see Gesson J.-P. 1165
Jacquier R. see Calmes M. 6875
Jacyno J. M. Harwood J. S. Cutler H. G. and Dulik D. M. Structure and solution-state conformation of botcinolide, a new biologically active metabolite from the fungus *Botrytis cinerea* 11585
Jager J. see Schank K. 3721
Jaime C. see Moreno-Mañas M. 11213
Jain R. Singh M. and Chauhan V. S. Conformationally restricted peptides: solution conformation of tetra and hepta peptides containing α,β-dehydrophenylalanine residues in alternate positions 907
Jakobs A. E. Christiaens L. E. and Renson M. J. Synthesis of monosulphur and monoselenium analogues of psoralen 9315
Jalalian M. see Eger K. 8371
Jamal N. M. see Searle P. A. 3879
Jamart-Grégoire B. see Caubère C. 11903
Jamart-Grégoire B. see Caubère C. 13433
Jameson G. B. see Trimurtulu G. 3993
Janousek Z. see De Boeck B. 7075
Jansen B. J. M. see Swarts H. J. 10083
Jansen B. J. M. see Verstegen-Haaksma A. A. 10073
Jansen B. J. M. see Verstegen-Haaksma A. A. 10095
Jansen J. F. G. A. see de Vries A. H. M. 4479
Jansen M. see Waldmann H. 11865
Jansen R. see Blechert S. 9649
Janssen G. see Pannecouque C. 7231
Jarmuła A. see Krygowski T. M. 13155
Jaspars M. Rali T. Laney M. Schatzman R. C. Diaz M. C. Schmitz F. J. Pordesimo E.

O. and Crews P.
The search for inosine 5'-phosphate dehydrogenase (IMPDH) inhibitors from marine sponges. Evaluation of the bastadin alkaloids 7367
Jaspars M. see Crews P. 13567
Jastrzebski J. T. B. H. see van Maanen H. L. 11509
Jauch J.
Stereochemistry of the Rubottom oxidation with bicyclic silyl enol ethers; synthesis and dimerization reactions of bicyclic α-hydroxy ketones 12903
Jefford C. W. see Tanaka J. 9989
Jendralla H. see Beck G. 4691
Jennings N. S. see Saville-Stones E. A. 6695
Jensen H. M. see Bach K. K. 7543
Jespersen T. M. Bols M. Sierks M. R. and Skrydstrup T.
Synthesis of isofagomine, a novel glycosidase inhibitor 13449
Jewell, Jr C. F. Brinkman J. Petter R. C. and Wareing J. R.
Farnesyl chain modification of squalene synthase inhibitor benzylfarnesylamine: conversion to the terminal bis(trifluoromethyl) derivative 3849
Jeyashri B. see Balasubrahmanyam S. N. 8127
Ji J. and Lu X.
Palladium catalyzed cyclization–carbonylation of allylic 2-alkynoates: facile synthesis of α-alkylidene-γ-butyrolactone β-acetic acid derivatives 9067
Jia Z. Koike K. Nikaido T. and Ohmoto T.
Two novel triterpenoid pentasaccharides with an unusual glycosyl glycerol side chain from *Ardisia crenata* 11853
Jia Z. see Koike K. 12811
Jiang M. see Sheehan S. K. 6155
Jiang S. see De Boeck B. 7075
Jiang T.-Y. see Yu S.-S. 11601
Jiang X.-K. Liu W. W.-Z. and Wu S.-H.
Can the spin-delocalization effect express itself at the transition state of the hydrogen-atom abstraction reaction? Correlation analysis of relative rates measured by a rigorous methodology for eleven *p*-Y-substituted isopropylbenzenes 7503
Jiang X.-K. see Wang J.-S. 10459
Jiang Z. see Andrieux C. P. 6913
Jie C. see Holder A. J. 627
Jiménez A. see Urones J. G. 10791
Jiménez A. I. see Cativiela C. 9157
Jiménez J. L. see Avalos M. 3273
Jiménez M. C. Miranda M. A. Soto J. and Tormos R.
Electron transfer oxidation of enol derivatives of 2,3-dihydrobenzopyran-4-ones 7635
Jiménez-Barbero J. see Asensio J. L. 6417
Jimeno M. L. see Escolástico C. 12489
Jimeno M.-L. see Velázquez S. 11013
Jinguji M. see Sugihara Y. 6495
Johnson R. see McGill J. M. 3857
Johnson R. K. see Dagne E. 5615
Johnson T. E. see Lindsey J. S. 8941
Johnston A. D. see Brimble M. A. 4887
Jokela R. see Lounasmaa M. 9207
Jokela R. see Tirkkonen B. 3537
Jones G. B. see Cotterill A. S. 7657
Jones S. D. see Batchelor M. J. 809
Jones T. H. see Garraffo H. M. 11329
Jordine G. Bick S. Möller U. Welzel P. Daucher B. and Maas G.
Studies on forskolin ring C forming reactions 139
Jordine G. Bick S. Möller U. Welzel P. Daucher B. and Maas G.
Corrigendum 4037
Jorgensen W. L. see Elbaum D. 1503
Joseph B. see Praly J.-P. 6559
Joshi B. S. Puar M. S. Bai Y. Panu A. M. and Pelletier S. W.
The structure of andersobine, a new diterpenoid alkaloid from *Delphinium andersonii* Gray 12283
Joshi P. L. see Hazra B. G. 2523
Jost K. see Schank K. 3721
Joubert J. A. see Martins F. J. C. 10783
Jouin P. see Roux F. 5345
Joule J. A. see Estévez C. 7879
Józwiak A. see Epsztajn J. 2907
Juanes O. see Esteban A. I. 13865
Juaristi E. and Ordoñez M.
Conformational analysis of 2-halotetrahydrothiopyran *S*-oxides. Diminution of the anomeric effect in S(O)–C–X compared to S–C–X segments 4937
Julius M. see Hoffmann R. W. 6049
Jung H. J. see Lee I. 7981
Jung M. see Hanefeld W. 2459
Jungk D. Schmidt N. Hahn J. Versloot P. Haasnoot J. G. and Reedijk J.
Bis(2,3-dimethylbutenyl)-sulfanes, the products of sulfane addition to 2,3-dimethyl-1,3-butadiene and of the reaction of sulfur with 2,3-dimethyl-2-butene 11187
Junjappa H. see Patro B. 255
Junjappa H. see Rao Ch. S. 5783
Jurayj J. see Lee E.-S. 9873
Jurriaans H. see Zhu G.-D. 7049
Jursic B. S. and Zdravkovski Z.
PM3 Calculations of Diels–Alder reactions of 'pull–push' activated isoprenes with aceto- and acrylonitrile 10379
Justice D. E. see Smith C. R. 11039

Kabuto C. see Ohta T. 5659
Kabuto C. see Toyota M. 1093
Kádas I. Árvai G. Toke L. Tóth G. Szöllosy Á. and Bihari M.
A simple method for the preparation of various 1-oxohydrindene-2-acetic and -propionic acids. Valuable precursors of strigol and its analogues 2895
Kadota S. see Meselhy M. R. 3081
Kadow J. F. Cook D. J. Doyle T. W. Langley D. R. Pham K. M. Vyas D. M. and Wittman M. D.
Facile synthesis of a simplified bicyclo[7.3.1] esperamicin–calicheamicin enediyne core 1519
Kafarski P. see Mucha A. 12743
Kagan H. B. see Börner A. 10419
Kagan H. B. see Riant O. 4543
Kagawa T. see Oikawa H. 13347
Kählig H. see Binder W. H. 10407
Kahne D. E. see Walker S. L. 1351
Kajtár-Peredy M. see Fetter J. 4185

Kajtár-Peredy M. see Sóti F. 8209
Kakefuda A. Shuto S. Nagahata T. Seki J. Sasaki T. and Matsuda A. Nucleosides and nucleotides—CXXXII. Synthesis and biological evaluations of ring-expanded oxetanocin analogues: purine and pyrimidine analogues of 1,4-anhydro-2-deoxy-D-arabitol and 1,4-anhydro-2-deoxy-3-hydroxymethyl-D-arabitol 10167
Kakinuma K. see Yamauchi N. 4125
Kakkar V. V. see Elgendy S. 3803
Kakkar V. V. see Green D. 5099
Kakoi H. see Inoue S. 2729
Kakoi H. see Inoue S. 2753
Kaldy S. see Heumann A. 539
Kamada M. see Akiba T. 3905
Kamada M. see Tamura O. 3889
Kamanaka T. see Nishide K. 8337
Kamano Y. see Zhang H. 10201
Kamata M. Murakami Y. Tamagawa Y. Kato M. and Hasegawa E. Pyrylium salt sensitized photochemical deprotections of dithioacetals and ketals 12821
Kamimura A. and Hori K. Reversing the regiochemical course of 1,3-dipolar cycloaddition of nitrile oxides by modification of dipolarophiles 7969
Kammermeier B. see Beck G. 4691
Kan Y. see Shoji N. 4973
Kanai A. see Matsumoto T. 9781
Kane V. V. De Wolf W. H. and Bickelhaupt F. Synthesis of small cyclophanes 4575
Kanematsu K. see Baba Y. 5645
Kanjia M. see Gabbutt C. D. 2507
Kanjia M. see Gabbutt C. D. 827
Kanschik A. see Fitjer L. 10867
Kanschik A. see Fitjer L. 10879
Kanth J. V. B. see Periasamy M. 6411
Kantharaj E. see Ramana D. V. 2485
Kaptein B. see Pirrung F. O. H. 12415
Karaghiosoff K. see Bansal R. K. 7675
Karamfilova K. see Georgieva A. 9399
Kardos-Balogh Z. see Sóti F. 8209
Karolak-Wojciechowska J. see Mikołajczyk M. 8053
Karpiesiuk W. and Banaszek A. Simple approach to *O*-protected deaminotunicaminyluracil 2965
Kasai Y. see Okada Y. 12159
Kascheres C. see Augusti R. 6723
Kashman Y. see Gellerman G. 12959
Kashman Y. see Talpir R. 4179
Kashyap R. P. see Coxon J. M. 13037
Kasmi H. see Akssira M. 9051
Kassiou M. and Read R. W. Synthesis and stereochemical assignment of 2,5-*trans*-2',5'-*trans*-5,5'-dimethylperhydro-2,2'-bipyrimidine and heterocycles derived from its condensation with formaldehyde 2497
Kasturi T. R. and Arumugam S. Potassamide induced *in situ* benzylation of 5,6-dihydroisoquinolines: structure of novel products 13277
Kather K. see Bach T. 12319
Kato H. see Tsukamoto S. 13583
Kato K. Suemune H. and Sakai K. Asymmetric alkylation using chiral cyclic diols to prepare a quaternary carbon 3315
Kato K. see Hosono F. 13335
Kato M. see Kamata M. 12821
Katoh T. see Akiba T. 3905
Katoh T. see Saito S. 6193
Katoh T. see Saito S. 6209
Katoh T. see Tamura O. 3889
Katoh T. Kirihara M. Nagata Y. Kobayashi Y. Arai K. Minami J. and Terashima S. Synthetic studies on quinocarcin and its related compounds—IV. Total synthesis of enantiomeric pairs of quinocarcin and 10-decarboxyquinocarcin 6239
Katoh T. Kirihara M. Yoshino T. Tamura O. Ikeuchi F. Nakatani K. Matsuda F. Yamada K. Gomi K. Ashizawa T. and Terashima S. Synthetic studies on quinocarcin and its related compounds—V. Synthesis and antitumor activity of various structural types of quinocarcin congeners 6259
Katoh T. Nagata Y. Kobayashi Y. Arai K. Minami J. and Terashima S. Synthetic studies on quinocarcin and its related compounds—III. Synthesis of 5-substituted- and 3,5-disubstituted-2-formyl-pyrrolidine derivatives, the key D-ring fragments of enantiomeric pairs of quinocarcin and 10-decarboxyquinocarcin 6221
Katritzky A. R. Ignatchenko A. V. Lan X. Lang H. Stevens C. V. Opitz A. Koch R. and Anders E. Benzotriazole-assisted β-lithiation of vinyl ethers 6005
Katritzky A. R. Köditz J. and Lang H. Benzotriazolylmethylaminosilanes: novel azomethine ylide equivalents 12571
Katrusiak A. see Katrusiak A. 12933
Katrusiak A. Katrusiak A. and Bałoniak S. Reactivity of 6-chloro-4- and 5-hydrazino-2-phenyl-3(2*H*)-pyridazinones with Vilsmeier reagent 12933
Katsuhira T. see Harada T. 7987
Katsuki T. see Hosoya N. 4311
Katsuki T. see Noda K. 9609
Katsuki T. see Sasaki H. 11827
Kawada M. see Mandai T. 475
Kawajiri N. see Mori Y. 11133
Kawasaki N. see Tsuda M. 7957
Kayashita T. see Morita H. 12599
Kayashita T. see Morita H. 6797
Kayashita T. see Morita H. 9975
Kazmaier U. Stereoselective synthesis of 2-(2'-cycloalkenyl) glycinates via [3,3] sigmatropic rearrangement of chelated ester–enolates 12895
Keiner P. and Brückner R. The [2,3]-Wittig rearrangements of lithioalkyl allyl ethers exhibit different *cis,trans*-selectivities than [2,3] shifts in their lithiomethyl analogues 13417
Keller P. A. see Black D. St. C. 10497
Keller P. A. see Bringmann G. 9643
Kellogg R. M. see Edema J. J. H. 2095
Kelly-Borges M. see Yeung B. K. S. 12593
Kem W. R. see Prokai-Tatrai K. 9909
Kenda B. see Krief A. 7177
Kende A. S. see Herlem D. 2055
Kennewell P. see Grigg R. 5489
Kennewell P. D. see Miller D. J. 5159
Keresztury G. see Sóti F. 8209
Khare A. see Srivastav S. 789
Khound S. see Das P. J. 9107

Khuong-Huu F. see Herlem D. 2055
Khuong-Huu F. see Py S. 6881
Kiefer M. Vogel R. Helmchen G. and Nuber B. Resolution of (1,1'-binaphthalene)-2,2'-dithiol by enzyme catalysed hydrolysis of a racemic diacyl derivative 7109
Kigoshi H. see Ishiwata H. 12853
Kikuchi R. see Ohta T. 5659
Kilburn J. D. see Destabel C. 11267
Kilburn J. D. see Destabel C. 11289
Killar L. M. see Musza L. L. 11369
Kim K. S. see Boons G.-J. 7157
Kimbu S. F. see Ayafor J. F. 9343
Kingston D. G. I. see Dagne E. 5615
Kinoshita M. see Nakamura K. 4681
Kirihara M. see Katoh T. 6239
Kirihara M. see Katoh T. 6259
Kirsch G. see Bull J. R. 6363
Kiss L. see Praly J.-P. 6559
Kitagawa I. see Yoshikawa M. 9619
Kitagawa I. see Yoshikawa M. 9961
Kitajima M. see Takayama H. 11813
Kitajima M. see Takayama H. 8363
Kitoh Y. see Satoh T. 4957
Kless A. see Börner A. 10419
Klix R. C. see Ager D. J. 1975
Klix R. C. see McIntosh J. M. 1967
Kluge S. see Bertucco A. 8237
Klumpp G. W. see Schmitz R. F. 5933
Klunder A. J. H. see Dols P. P. M. A. 3473
Klunder A. J. H. see Dols P. P. M. A. 8515
Klunder A. J. H. see Zhu J. 10597
Knaus E. E. see Wei Z.-Y. 5569
Knieriem B. see Albrecht K. 383
Knight D. W. see Bennett F. 5147
Knight J. see Destabel C. 11267
Knight J. see Destabel C. 11289
Knochel P. see Duddu R. 2415
Knoess H. P. see Duddu R. 2415
Knölker H.-J. and O'Sullivan N. Indoloquinones—III. Palladium-promoted synthesis of hydroxy-substituted 5-cyano-5*H*-benzo[*b*]carbazole-6,11-diones 10893
Knorr R. Freudenreich J. Polborn K. Nöth H. and Linti G. A β,β-shielded vinyllithium example for a quantification of structure, monomer–dimer equilibrium and some reactivity parameters 5845
Ko C.-W. see Chou T. 10721
Kobata H. see Morita H. 6797
Kobata H. see Morita H. 9975
Kobayashi H. see Aoyagi Y. 13575
Kobayashi J. see Doi Y. 8651
Kobayashi J. see Kondo K. 8355
Kobayashi J. see Shigemori H. 8347
Kobayashi J. see Tsuda M. 4667
Kobayashi J. see Tsuda M. 7957
Kobayashi J. see Zhang H. 10201
Kobayashi J. Ogiwara A. Hosoyama H. Shigemori H. Yoshida N. Sasaki T. Li Y. Iwasaki S. Naito M. and Tsuruo T. Taxuspines A–C, new taxoids from Japanese yew *Taxus cuspidata* inhibiting drug transport activity of P-glycoprotein in multidrug-resistant cells 7401
Kobayashi K. see Suginome H. 8293
Kobayashi M. see Ichikawa J. 11637
Kobayashi S. Horibe M. and Saito Y. Enantioselective synthesis of both diastereomers, including the α-alkoxy-β-hydroxy-β-methyl(phenyl) units, by chiral tin(II) Lewis acid-mediated asymmetric aldol reactions 9629
Kobayashi S. Ishitani H. Hachiya I. and Araki M. Asymmetric Diels–Alder reactions catalyzed by chiral lanthanide(III) trifluoromethanesulfonates. Unique structure of the triflate and stereoselective synthesis of both enantiomers using a single chiral source and a choice of achiral ligands 11623
Kobayashi Y. see Akiba T. 3905
Kobayashi Y. see Katoh T. 6221
Kobayashi Y. see Katoh T. 6239
Kobayashi Y. see Saito S. 6193
Kobayashi Y. see Tamura O. 3889
Kóbor J. Sohár P. and Fülöp F. Synthesis and stereochemical study of *cis*- and *trans*-1-(3'-substituted-propyl)benzo-[*a*]quinolizidine 4873
Kobrehel G. see Lazarevski G. 12201
Koch R. see Katritzky A. R. 6005
Kochi J. K. see Rathore R. 6727
Kocienski P. see Bury P. 8793
Kocovsky P. see Stary I. 529
Köditz J. see Katritzky A. R. 12571
Kodukulla R. P. K. Hariharan S. and Trivedi G. K. Stereochemical investigation in the 1,3-dipolar cycloadditions of 3-nitro-2-phenyl-2*H*-1-benzopyrans to diazoalkanes: synthesis and antimicrobial activity of novel benzopyranopyrazole derivatives 4623
Koezuka Y. see Natori T. 2771
Koga K. see Ando K. 13081
Koga K. see Inoue I. 4429
Koga K. see Tanaka M. 12829
Koga K. see Tanaka M. 12843
Koguro K. see Sugimura T. 11647
Köhler K. F. see Frenking G. 11197
Kohmoto K. see Oikawa H. 13347
Kohnke F. H. Parisi M. F. Raymo F. M. O'Neil P. A. and Williams D. J. Acenaphane derivatives from furan macrocycles 9113
Koike K. see Jia Z. 11853
Koike K. see Nagahisa M. 10859
Koike K. Li H. Jia Z. Muraoka H. Fukui S. Inoue M. and Ohmoto T. Triterpenoid saponins from *Dianthus chinensis* 12811
Kojic-Prodic B. see Gelo-Pujic M. 13753
Kok J. see Faber W. S. 4775
Kolter T. van Echten-Deckert G. and Sandhoff K. Synthesis of sphinganine analogues modified in the head group 13425
Komarov I. V. Denisenko V. E. and Kornilov M. Yu. Selective catalytic hydrogenation in the presence of lanthanide *tris*-β-diketonates as 'protecting' reagents 6921
Kondo K. Ishibashi M. and Kobayashi J. Isolation and structures of theonezolides B and C from the Okinawan marine sponge *Theonella* sp. 8355
Kondo Y. Shiga F. Murata N. Sakamoto T. and Yamanaka H. Condensed heteroaromatic ring systems—XXIV. Palladium-catalyzed cyclization of 2-substituted phenylacetylenes in the

presence of carbon monoxide 11803
Kong F. Andersen R. J. and Allen T. M. Ingamines A and B, new cytotoxic alkaloids from the marine sponge *Xestospongia ingens* 6137
König G. M. and Wright A. D. New dolabellanes from the marine alga *Dictyota pardalis* f. *pseudohamata* 8011
Kooijman H. see van Maanen H. L. 11509
Koola J. J. see Clennan E. L. 8569
Koomen G.-J. see Boogaard A. T. 2551
Koomen G.-J. see Boogaard A. T. 4811
Korn A. Rudolph-Böhner S. and Moroder L. On the synthesis of (2*S*)-aziridine-2-carboxylic acid containing peptides 1717
Korn A. Rudolph-Böhner S. and Moroder L. A convenient synthesis of optically pure (2*R*,3*R*)-2,3-epoxysuccinyl-dipeptides 8381
Kornilov M. Yu. see Komarov I. V. 6921
Kosaka T. see Zhang H. 10201
Koseki C. see Ishikawa T. 9287
Koseki N. see Ishikawa T. 9287
Koshima H. Chisaka Y. Wang Y. Yao X. Wang H. Wang R. Maeda A. and Matsuura T. Solid-state photochemistry of the mixed crystals between benzoquinones and polymethylbenzenes 13617
Koshti N. Huber V. Smith P. and Gopalan A. S. Design and synthesis of actinide specific chelators: synthesis of new cyclam tetrahydroxamate (CYTROX) and cyclam tetraacetonyl-acetone (CYTAC) chelators 2657
Kostiainen R. K. see Tauber A. Y. 4723
Kotha S. Opportunities in asymmetric synthesis: an industrial prospect 3639
Kotzamani H. K. Gourdoupis C. G. and Stamos I. K. An approach to 1-alkyl-3-phenylpiperidine derivatives containing 2,5-functionalized groups: 1-methyl-2-(4-chlorophenylthiomethyl)-5-(methoxycarbonyl)-piperidine 10477
Kou X. see Dalley N. K. 2721
Kouklovsky C. see Ley S. V. 835
Kourany-Lefoll E. Laprévote O. Sévenet T. Montagnac A. Païs M. and Debitus C. Phloeodictines A1–A7 and C1–C2, antibiotic and cytotoxic guanidine alkaloids from the New Caledonian sponge, *Phloeodictyon* sp. 3415
Kousha K. see Chan P. C.-M. 2703
Kovács I. see Herczegh P. 13671
Kowalczyk J. see Dodziuk H. 3619
Kozma D. Ács M. and Fogassy E. Predictions of which diastereoisomeric salt precipitates during an optical resolution via diastereo-isomeric salt formation 6907
Krajewski J. see Panfil I. 7219
Krakowiak K. E. see Dalley N. K. 2721
Kramer B. see Bringmann G. 7807
Krasik P. and Alper H. Schiff bases as added chiral ligands for the $[Ru(\eta^6\text{-}C_6H_6)Cl_2]_2$ catalysed hydrogen-transfer reduction of ketones with 2-propanol 4347
Kraus G. A. and Bougie D. The preparation of a hexacyclic intermediate for the synthesis of Strychnos alkaloids 2681
Krawiec M. see Aleksandrov A. M. 8597
Krebs F. see Fuchs E. 759
Krebs H. C. see Schole J. 1125
Krief A. Kenda B. Barbeaux P. and Guittet E. Synthesis of arylcycloalkanes from ω-alkenyl benzyl-selenides 7177
Krishnamurthy G. Ding W. O'Brien L. and Ellestad G. A. Circular dichroism studies of calicheamicin–DNA interaction: evidence for calicheamicin-induced DNA conformational change 1341
Krishnan K. see Srikrishna A. 8765
Kristinsson H. Nebel K. O'Sullivan A. C. Struber F. Winkler T. and Yamaguchi Y. A novel synthesis of sulfamoyl nucleosides 6825
Kröcher O. see Bringmann G. 2831
Krolikiewicz K. see Vorbrüggen H. 6549
Kruger H. G. see Martins F. J. C. 10783
Krygowski T. M. Anulewicz R. Jarmuła A. Bak T. Rasała D. and Howard S. The effect of the methoxy group on the geometry of the benzene ring supported by crystal structure studies and *ab initio* calculations. Crystal and molecular structure of 4-(4-methoxyphenyl)-2,6-diphenylpyridine and 1-methyl-4-(4-methoxyphenyl)-2,6-diphenylpyridinium perchlorate 13155
Krysan D. J. Haight A. R. Menzia J. A. and Welch N. A stereoselective synthesis of the dihydroxyethylene dipeptide isostere, A-82768 6163
Krysiak J. A. see Epsztajn J. 2907
Kubo A. see Saito N. 3915
Kudo K. see Hashimoto Y. 8317
Kühne H. see Heuer M. 2029
Kulagowski J. J. see Cox G. G. 3195
Kulkarni D. G. see Sonawane H. R. 1243
Kumar N. see Black D. St. C. 10497
Kumar N. see Black D. St. C. 10983
Kumar P. see Pandey B. 3835
Kumar P. see Pandey B. 3843
Kumara Swamy K. C. see Said M. A. 6989
Kumaraswamy G. see Pandey G. 8185
Kunte S. S. see Prakash T. P. 11699
Kurihara T. see Aoyagi Y. 13575
Kuroda Y. see Yoshikawa M. 9619
Kuroki Y. Akao R. Inazumi T. and Noguchi M. Thermal ene reaction of 4-(2-alkenylamino)-3-formyl-2(2*H*)-chromenones 1063
Kusuda S. Ueno Y. and Toru T. Vinyl anion equivalent—V. Asymmetric synthesis of allylic alcohols using chiral 2-(trialkylsilyl)ethyl sulfoxides 1045
Kuwano H. see Yoda K. 6537
Kvittingen L. Some aspects of biocatalysis in organic solvents 8253
Kwan M. M. Y. see Doyle M. P. 1665
Kwan M. M. Y. see Doyle M. P. 4519

L'abbé G. Buelens J. Dehaen W. Toppet S. Feneau-Dupont J. and Declercq J.-P. Synthesis of fused 1,2,4-thiadiazoles from 5-chloro-1,2,4-thiadiazol-3(2*H*)-ones 7019
Lajunen M. Synthesis of some conjugated caradienes from 3-carene by the Wittig reaction and their

reactivity in the Diels–Alder reaction 13181
Lakhvich F. A. see Zaitsev V. G. 6377
Lal B. Bhedi D. N. Gidwani R. M. and Sankar C. A novel entry into 1,2,3,4,5,6-hexahydro-3-benzazocine-4,6-dione and 2-substituted-2,5,6,7-tetrahydro-4-benzazonine-1,3-(4*H*)-dione 9167
Lallemand J.-Y. see Boyer F.-D. 10443
Lamara K. Redhouse A. D. Smalley R. K. and Thompson J. R. 3*H*-Azepines and related systems—V. Photoinduced ring expansions of *o*-azidobenzonitriles to 3-cyano- and 7-cyano-3*H*-azepin-2(1*H*)-ones 5515
Lammers H. Cohen-Fernandes P. and Habraken C. L. Nucleophilic behaviour of DBU and DBN in reactions with 4-halo-3,5-dimethyl-1-nitro-1H-pyrazoles 865
Lammers H. Peters J. A. and van Bekkum H. Reductive amination of aldohexoses with mono- and bifunctional alkyl amines: conversion of carbohydrates into EDTA type complexing agents 8103
Lan X. see Katritzky A. R. 6005
Lance M. see Roux M.-C. 8445
Landais Y. see Dhal R. 1153
Laney M. see Jaspars M. 7367
Lang H. see Katritzky A. R. 12571
Lang H. see Katritzky A. R. 6005
Lang, Jr S. A. see Raifeld Y. E. 8603
Lange J. see Bringmann G. 2831
Langley D. R. see Kadow J. F. 1519
Langley D. R. Doyle T. W. and Beveridge D. L. Probing the underlying basis for the binding specificity of calicheamicin γ_1^I. A molecular dynamics study 1379
Lanzetta R. see Evidente A. 10371
Lanzotti V. see Conte M. R. 13469
Lanzotti V. see Conte M. R. 849
Laprévote O. and Das B. C. Structural elucidation of acetogenins from Annonaceae by fast atom bombardment mass spectrometry 8479
Laprévote O. see Kourany-Lefoll E. 3415
Larchevêque M. see Grosjean F. 9325
Lardicci L. Malanga C. Balzano F. and Menicagli R. Catalyzed reaction of 2-methyl-1,3-dioxep-4-ene and halogen magnesium salts of secondary amines. A new approach to allylamino-alcohols 12953
Lardy R. see Bringmann G. 10245
Largeron M. Vuilhorgne M. Le Potier I. Auzeil N. Bacqué E. Paris J. M. and Fleury M. B. Electrochemical reduction of pristinamycin I_A and related streptogramins in aqueous acidic medium 6307
Larhed M. Andersson C.-M. and Hallberg A. Chelation-controlled, palladium-catalyzed arylation of enol ethers with aryl triflates. Ligand control of selection for α- or β-arylation of [2-(dimethylamino)ethoxy]-ethene 285
Larock R. C. Yum E. K. and Yang H. Palladium-catalyzed intermolecular arylation of functionally-substituted cycloalkenes by aryl iodides 305
Laschat S. Narjes F. and Overman L. E. Application of intramolecular Heck reactions to the preparation of steroid and terpene intermediates having *cis* A–B ring fusions. Model studies for the total synthesis of complex cardenolides 347
Lau J. see Andersen K. E. 8699
Laurent H. see Bull J. R. 6347
Lavilla R. Gotsens T. Gullón F. and Bosch J. Nucleophilic additions to pyridinium salts. Reduction of the intermediate dihydropyridines 5233
Lawlor E. J. Elson S. W. Holland S. Cassels R. Hodgson J. E. Lloyd M. D. Baldwin J. E. and Schofield C. J. Expression in *Escherichia coli* of a clavaminic acid synthase isozyme: a trifunctional oxygenase involved in clavulanic acid biosynthesis 8737
Lazarevski G. Vinkovic M. Kobrehel G. Dokic S. and Metelko B. Conformational analysis of 9-deoxo-9a-aza-9a- and 9-deoxo-8a-aza-8a-homoerythromycin A 6,9-cyclic iminoethers 12201
Lebedev A. V. see Balbi A. 4009
Leblanc Y. see Boudreault N. 7947
Le Bras N. see Bauchat P. 7815
Lebrun A. see Dhal R. 1153
Leclercq S. Thirionet I. Broeders F. Daloze D. Vander Meer R. and Braekman J. C. Absolute configuration of the solenopsins, venom alkaloids of the fire ants 8465
Lee C.-H. and Lindsey J. S. One-flask synthesis of *meso*-substituted dipyrromethanes and their application in the synthesis of *trans*-substituted porphyrin building blocks 11427
Lee E. C. see Andersen K. E. 8699
Lee E.-S. Jurayj J. and Cushman M. Synthesis of [L-3-deoxymimosine[4]-angiotensin I as an approach to the preparation of selective protein–tyrosine kinase (PTK) inhibitors 9873
Lee G.-H. see Yang C.-H. 12133
Lee G. M. see Searle P. A. 3879
Lee I. Chung D. S. and Jung H. J. Theoretical studies of the effects of α-substituents on the resonance demand of 4-methoxybenzyl carbocations 7981
Lee L.-T. see Yang C.-H. 12133
Lee V. J. see Raifeld Y. E. 8603
Legendre J. J. see Grosjean F. 9325
Legros J.-Y. and Fiaud J.-C. Electronic control of enantioselectivity in the palladium-catalyzed asymmetric allylic substitution of *trans* 4-*t*-butyl-1-vinylcyclohexyl benzoates 465
Lehmann R. see Wipf P. 1935
Lemaire-Audoire S. see Genêt J. P. 497
Lemeune S. see Genêt J. P. 497
Lempert K. see Fetter J. 4185
Lenain V. see Dhal R. 1153
Lennon I. C. see Horwell D. C. 4225
Le Potier I. see Largeron M. 6307
Leroy C. Dupas G. Bourguignon J. and Quéguiner G. Reduction of new substrates with a NADH model. Reduction of *N*-acylenamines: mechanism and scope 13135

Leshcheva I. F. see Nenajdenko V. G. 775
Lesma G. see Danieli B. 6941
Lesma G. see Danieli B. 8837
Lesueur C. Nouguier R. Bertrand M. P. Hoffmann P. and De Mesmaeker A. Stereocontrol in radical cyclizations on sugar templates 5369
Lesuisse D. Canu F. and Tric B. A new route to 19-substituted steroids from 19-nor steroids: sigmatropic [3,3] and [2,3] rearrangements revisited 8491
Lete E. see Sotomayor N. 2207
Le thi Quyen Adam G. and Schreiber K. Partial synthesis of nitrogenous brassinosteroid analogues with solanidane skeleton 10923
Lévai A. see Adam W. 13113
Levillain J. see Barillier D. 5413
Levisalles J. see Hamon L. 161
Lewis I. and Bruns C. Synthesis of somatostatin analogues incorporating nucleo amino acids 7485
Ley S. V. see Boons G.-J. 7157
Ley S. V. see Grossman R. B. 11553
Ley S. V. see Grossman R. B. 8871
Ley S. V. Doherty K. Massiot G. and Nuzillard J.-M. 'Connectivist' approach to organic structure determination: Lsd-program assisted NMR analysis of the insect antifeedant azadirachtin 12267
Ley S. V. and Kouklovsky C. Towards the synthesis of the C_{37}–C_{42} fragment of rapamycin: intramolecular reactions of allyl silanes with oxonium ions generated from α-alkoxy sulfones 835
Lhoste P. see Goux C. 10321
Li H. see Koike K. 12811
Li Y. see Kobayashi J. 7401
Li Y.-F. see Hammerschmidt F. 10253
Li Y.-L. Sun X.-L. and Wu Y.-L. Synthetic study on chirol building block of vicinal diol, chiron approach to the precursors of all sphingosine stereoisomers 10727
Liang J. see Tanaka J. 9989
Lichtfouse E. and Albrecht P. Synthesis of triaromatic steroid hydrocarbons methylated at position 2, 3 or 6: molecular fossils of yet unknown biological origin 1731
Lidón Mª J. see Molina P. 10029
Liebscher J. see Bohrisch J. 10701
Liesch J. M. see Schwartz R. E. 1675
Lightner D. A. see Hwang K.-O. 1955
Lightner D. A. see Hwang K.-O. 9919
Lightner D. A. see Nogales D. F. 8579
Likhite A. P. see Deshpande S. R. 10367
Limbert M. see Marzian S. 5299
Lin Y. see Ziegler, Jr C. B. 12085
Lindell S. D. see Saville-Stones E. A. 6695
Linden A. see Senderowitz H. 9691
Lindsey J. S. see Lee C.-H. 11427
Lindsey J. S. see Wagner R. W. 11097
Lindsey J. S. Prathapan S. Johnson T. E. and Wagner R. W. Porphyrin building blocks for modular construction of bioorganic model systems 8941
Linstrumelle G. see Chemin D. 5335
Linti G. see Knorr R. 5845
Linz C. see Metz P. 3951
Litaudon M. see Perry N. B. 3987
Litaudon M. see Trimurtulu G. 3993
Litaudon M. Trigalo F. Martin M.-T. Frappier F. and Guyot M. Lissoclinotoxins: antibiotic polysulfur derivatives from the tunicate *Lissoclinum perforatum*. Revised structure of lissoclinotoxin A 5323
Lithgow A. M. see Urones J. G. 10791
Lithgow A. M. see Urones J. G. 10995
Little R. D. see Amputch M. A. 5591
Liu B. see Wee A. G. 609
Liu C. see Beak P. 5999
Liu H. see Curran D. P. 7343
Liu W. W.-Z. see Jiang X.-K. 7503
Liu Z.-Y. Dong H. and Chu X.-J. Total synthesis and structural revision of chromomoric acid C-I and C-II methyl esters 12337
Livinghouse T. see Harring S. R. 9229
Livinghouse T. see McKinstry L. 6145
Livinghouse T. see Sheehan S. K. 6155
Lloret F. see Foubelo F. 5131
Lloret F. see Foubelo F. 6715
Lloris M. E. see Moreno-Mañas M. 11213
Lloyd M. D. see Lawlor E. J. 8737
Lluch J. M. see Martin X. 6689
Lobkovsky E. see Rodríguez J. 11079
Löffler D. see Griesbeck A. G. 701
Logaraj S. see Ye M. 6109
Lohrenz J. C. W. see Boche G. 5889
Lokhov S. G. see Balbi A. 4009
Lolkema L. D. M. Hiemstra H. Semeyn C. and Speckamp W. N. π-Cyclizations of α-methoxy-carbonyl oxycarbenium ions; synthesis of oxacyclic carboxylic esters 7115
Lolkema L. D. M. Semeyn C. Ashek L. Hiemstra H. and Speckamp W. N. Studies on the role of the 2-oxonia Cope rearrangement in π-cyclizations of α-methoxy-carbonyl oxycarbenium ions 7129
Lönnberg H. see Hovinen J. 7203
López J.-L. see Caballero E. 7849
Lopez L. see Ciminale F. 12685
Lopez L. Mele G. Fiandanese V. Cardellicchio C. and Nacci A. Aminium salts catalyzed rearrangement of α-pinene and β-ionone oxides 9097
López M. see Urones J. G. 10791
López R. see Asensio J. L. 6417
López-Calahorra F. see Castells J. 13765
López-Leonardo C. see Molina P. 5027
Lorenc L. see Dabovic M. 1833
Lorenz M. see Veith M. 6859
Loreto M. A. see Barani M. 3829
Losada M. see Armesto X. L. 2265
Losada M. see Armesto X. L. 10509
Losch S. see Wadsworth D. J. 8673
Loubinoux B. O'Sullivan A. C. Sinnes J.-L. and Winkler T. A new method for the synthesis of 2-carboxymethyl-2-hydroxy-tetrahydropyrans 2047
Lounasmaa M. Jokela R. Hanhinen P. Miettinen J. and Salo J. Preparation and conformational study of *Z*- and *E*-isositsirikine epimers and model compounds. Determination of their C-16 configurations 9207

Lounasmaa M. see Tirkkonen B. 3537
Low J. N. see Melguizo M. 13511
Lowe D. see Chengzhi C. 5735
Loya Y. see Talpir R. 4179
Lu X. see Ji J. 9067
Lubin N. see Lubineau A. 10265
Lubineau A. Augé J. Grand E. and Lubin N. Aqueous hetero Diels–Alder reactions: the carbonyl case 10265
Lucarini M. see Cabiddu S. 4001
Lucchini V. see Florio S. 5037
Luchetti L. see Cerichelli G. 3797
Luchetti L. see Di Vona M. L. 2949
Luchetti L. see Di Vona M. L. 8203
Luger P. see Mahato S. B. 10803
Luis J. G. see Fraga B. M. 12643
Luis J. G. Echeverri F. Quiñones W. González A. G. Torres F. Cardona G. Archbold R. and Perales A. Withajardins, withanolides with a new type of skeleton. Structure of withajardins A, B, C and D; absolute configuration of withajardin C 1217
Luis J. G. Fletcher W. Q. Echeverri F. and Grillo T. A. Phenalenone-type phytoalexins from *Musa acuminata*. Synthesis of 4-phenyl-phenalenones 10963
Luis S. V. see Altava B. 7535
Lukacs G. see Herczegh P. 13671
Lunazzi L. see Bartoli G. 2561
Lund H. see Balslev H. 7889
Lundie K. see Coxon J. M. 13037
Lundt B. F. see Andersen K. E. 8699
Lundt I. Madsen R. Al Daher S. and Winchester B. Deoxyiminoalditols from aldonolactones—III. Preparation of 1,4-dideoxy-1,4-imino-L-gulitol. Evaluation of 1,4-dideoxy-1,4-iminohexitols as glycosidase inhibitors 7513
Lundt I. and Frank H. Enantiomerically pure, highly functionalized tetrahydrofurans from simple carbohydrate precursors 13285
Lusinchi X. see Hanquet G. 12185
Luthman K. see Tanner D. 9797
Luu B. see Pannecoucke X. 1173
Luu B. see Pannecoucke X. 6569
Luu B. see Parmentier G. 5361
Luu B. see Parmentier G. 7341
Lux G. M. see Van Aken K. J. 5211
Lynch G. P. see Croucher P. D. 13299
Lynch M.-J. see Haaima G. 2161

Maas G. see Alt M. 7435
Maas G. see Jordine G. 139
Maas G. see Jordine G. 4037
Maas G. see Schlag W.-R. 3123
Maas G. see Seibel J. 715
Maas G. see Wagemann R. 731
Macaluso G. see Frenna V. 7315
Macchia F. see Chini M. 1261
Macciantelli D. see Bartoli G. 2561
Macías F. A. Aguilar J. M. Molinillo J. M. G. Massanet G. M. and Fronczek F. R. Studies on the stereostructure of eudesmanolides from *Umbelliferae*: synthesis of 11β-angeloyloxy-α-santonin 5439
MacKenzie Turner S. C. see Baldwin J. E. 9411
MacKenzie Turner S. C. see Baldwin J. E. 9425
Macko L. see Damm W. 7029
MacPhail A. T. see McNelis B. J. 6767
Madero J. G. see Collado I. G. 10531
Madge D. J. see Hodson H. F. 1899
Madono T. see Shigemori H. 8347
Madsen R. see Lundt I. 7513
Maeda A. see Koshima H. 13617
Maeda K. see Takao K. 5681
Maercker A. and Daub V. E. E. Polylithiumorganic compounds—XIX. Regioselective carbon–carbon σ-bond scission followed by a 1,6-proton shift upon the reductive metalation of benzylidenecyclopropane derivatives with lithium metal 2439
Maercker A. and Girreser U. Polylithiumorganic compounds—XX. Stereoselective synthesis of vicinal dilithioalkenes by addition of lithium metal to carbon–carbon triple bonds 8019
Maestro M. C. see de Ancos B. 13857
Mag M. and Engels J. W. Synthesis of dinucleotides containing a bridged non-chiral internucleotide 5'- or 3'-phosphoramidate linkage 10225
Mager H. I. X. and Tu S.-C. Aromatic hydroxylations by flavins: evidence on direct attack of phenylalanine by flavin radical species 5287
Mager H. I. X. and Tu S.-C. A novel hydroxylation of aromatics in a flavin-initiated chain reaction 6759
Maggi R. see Sartori G. 10587
Magno S. see Albrizio S. 783
Magno S. see Conte M. R. 13469
Magno S. see Conte M. R. 849
Magnus P. A general strategy using η^2-$Co_2(CO)_6$ acetylene complexes for the synthesis of the enediyne antitumor agents esperamicin, calicheamicin, dynemicin and neocarzinostatin 1397
Mah S. C. Price M. A. Townsend C. A. and Tullius T. D. Features of DNA recognition for oriented binding and cleavage by calicheamicin 1361
Mahajan M. P. see Mazumdar S. N. 7579
Maharaj D. see Dookran R. 1983
Mahato S. B. Mandal N. B. Chattopadhyay S. Nandi G. Luger P. and Weber M. Synthesis of indolylquinolines under Friedel–Crafts reaction conditions 10803
Mahato S. B. Sahu N. P. Roy S. K. and Sharma O. P. Potential antitumor agents from *Lantana camara*: structures of flavonoid-, and phenylpropanoid glycosides 9439
Mahomed A. A. see Atkins E. F. 7253
Maier M. E. see Brandstetter T. 1435
Maikap G. C. Reddy M. M. Mukhopadhyay M. Bhatia B. and Iqbal J. Cobalt catalyzed regioselective allylation of 1,3-dicarbonyl compounds 9145
Maiti A. K. and Bhattacharyya P. Polyethylene glycol (PEG) 4000 catalysed regioselective nucleophilic ring opening of oxiranes—a new and convenient synthesis of β-hydroxy sulfone and β-hydroxy sulfide 10483
Maiti S. see Banerji A. 9079
Maity S. K. Dutta S. K. Banerjee A. K. Achari B. and Singh M. Design and synthesis of mannose analogues as

inhibitors of α-mannosidase 6965
Majewski M. see Fitjer L. 10867
Mak C. C. see Chan K. S. 2003
Makleit S. see Simon C. 9757
Makomo H. Masson S. and Saquet M. Reductions of phosphonodithioformates: syntheses of α-phosphonyl thiols and hemidithioacetals 10277
Makosza M. and Sypniewski M. Oxidative versus vicarious nucleophilic substitution of hydrogen in the reaction of dithiane derivatives with nitroarenes 4913
Makriyannis A. see Tius M. A. 2671
Malakov P. Y. see Rodríguez B. 5451
Malanga C. see Lardicci L. 12953
Malanga C. see Menicagli R. 1871
Malone J. F. see Ardill H. 5067
Malone J. F. see Barr S. A. 11219
Malpass J. R. see Smith C. R. 11039
Mamedov E. G. see Akhmedov I. M. 2099
Manaviazar S. see Hale K. J. 9181
Mancheño B. see Guijarro D. 3427
Mancheño B. see Guijarro D. 8551
Mancini G. see Cerichelli G. 3797
Mandai T. Matsumoto T. Kawada M. and Tsuji J. A novel method for stereospecific generation of natural C-17 stereochemistry and either C-20 epimer in steroid side chains by palladium-catalyzed hydrogenolysis of C-17 and C-20 allylic carbonates 475
Mandal N. B. see Mahato S. B. 10803
Manescalchi F. see Boga C. 4709
Manfredi K. P. see Bringmann G. 7807
Manghisi E. see Banfi L. 11967
Manghisi E. see Banfi L. 11983
Mangholz S. see Esser T. 3709
Mani V. see Ye M. 6109
Mann I. S. see Bell D. 6643
Manzocchi A. see Ferraboschi P. 10539
Mao X. A. see Huo S. Q. 10467
Marastoni M. see Fantin G. 12973
Marc F. Soulet B. Serramedan D. et Delmond B. L'époxy-pyronène: synthon d'accès aux cyclocitrals et aux ionones et précurseur de nouveaux composés terpénoïdes 3381
Marchand A. P. see Coxon J. M. 13037
Marchand A. P. Sorokin V. D. Rajagopal D. and Bott S. G. Reactions of some sulfur(II)- and iodine(III)-containing electrophiles with *endo*-tricyclo[6.2.1.$0^{2,7}$]undeca-4,9-diene-3,6-dione 9933
Marchand A. P. Zope A. Zaragoza F. Bott S. G. Ammon H. L. and Du Z. Synthesis, characterization and crystal density modeling of four $C_{24}H_{28}$ cage-functionalized alkenes 1687
Marchesini A. see Beccalli E. M. 12697
Marchetti F. see Pini D. 205
Marco J. L. see Alcaraz C. 12443
Marco J. L. Martín N. Martínez-Grau A. Seoane C. Albert A. and Cano F. H. Development of methods for the synthesis of chiral, highly functionalized 2-amino-4-aryl-4*H*-pyrans 3509
Marco M. see Ribó J. M. 3967
Marcos A. Pedregal C. and Avendaño C. Synthesis of 2- and 4-oxo-1*H*-1-azaanthracene-9,10-diones from 2-amino-1,4-naphthoquinone 12941
Marcos I. S. see Urones J. G. 10791
Marcos I. S. see Urones J. G. 10995
Marcos I. S. Oliva I. M. Moro R. F. Díez D. and Urones J. G. Synthesis of a 1-acetyl-3α,6-dimethyl-hexahydroazulene. Versatile intermediate for the preparation of terpenoids with bicycle[5.3.0]decane system 12655
Marek I. see Meyer C. 11665
Mariggiò S. see Tiecco M. 10549
Marinelli F. see Arcadi A. 437
Marini F. see Tiecco M. 10549
Markó I. E. Evans G. R. and Declercq J.-P. Catalytic asymmetric Diels–Alder reactions of 2-pyrone derivatives 4557
Markó I. E. and Bayston D. J. The intramolecular silyl-modified Sakurai (ISMS) reaction. Synthetic studies towards ambruticine 7141
Markus A. see Heuer M. 2029
Markus A. see Marzian S. 5299
Marmon R. J. see Bowman W. R. 1275
Marmon R. J. see Bowman W. R. 1295
Marotta E. see Confalonieri G. 3235
Marotta E. Pagani I. Righi P. and Rosini G. Synthesis of methyl substituted bicyclo[3.2.0]hept-3-en-6-ones and 3,3a,4,6a-tetrahydro-2*H*-cyclopenta-[*b*]furan-2-ones 7645
Marougkas A. see Bishop R. 8749
Marples B. A. and Spilling C. D. The intramolecular ene reaction of 5-(prop-2-enyl)-2ξ-hydroxy-5α-cholestan-3-one 13461
Marquet J. see Andrieux C. P. 6913
Marquet J. see Moreno-Mañas M. 11213
Marsili A. see Bilia A. R. 5181
Martin M.-T. see Litaudon M. 5323
Martín M. R. see de Ancos B. 13857
Martín M. V. see Fariña F. 5169
Martín N. see Marco J. L. 3509
Martin R. A. see Sharma S. 9223
Martin X. Moreno M. Lluch J. M. and Grouiller A. Intramolecular hydrogen bonding in primary hydroxyl of thymine 1-(1-deoxy-β-D-psicofuranosyl) nucleoside 6689
Martín Castro A. M. see Escribano A. 7567
Martínez A. see Dueñas J. 10761
Martínez A. see Esteban A. I. 13865
Martínez A. G. Barcina J. O. Díez B. R. and Subramanian L. R. Geminal dialkylation, alkylative reduction and olefination of aliphatic aldehydes. Reaction of *gem*-bistriflates with higher order dialkylcyanocuprates 13231
Martinez J. P. see Burk M. J. 4399
Martínez L. E. see Jacobsen E. N. 4323
Martínez-Grau A. see Marco J. L. 3509
Martín-Muñoz M. G. Fierros M. Rodríguez-Franco M. I. and Conde S. *Mucor miehei* lipase catalyzed transesterifications on aromatic and heteroaromatic substrates. A general survey 6999
Martins F. J. C. Viljoen A. M. Kruger H. G. Joubert J. A. and Wessels P. L. Synthesis of δ-lactams from pentacyclo[5.4.0.$0^{2,6}$.$0^{3,10}$.$0^{5,9}$]undecane-8,11-dione 10783
Maruoka K. see Ooi T. 6505
Maruoka K. Murase N. Bureau R. Ooi T. and

Yamamoto H.
Lewis acid-promoted selective rearrangement of trisubstituted epoxides to aldehydes or ketones 3663
Maruoka K. Oishi M. Shiohara K. and Yamamoto H.
Methylaluminum bis(4-substituted-2,6-di-*tert*-butylphenoxide) as an efficient nonchelating Lewis acid: application to asymmetric Diels–Alder reaction and diastereoselective alkylation to alkoxy carbonyl substrates 8983
Maruyama T. see Gao Q. 979
Mary A. see Alazard J.-P. 6287
Marzabadi C. H. Spilling C. D. and Tyler L. M.
The chemistry of glucal halohydrins: the effect of the halide on epoxide formation 6783
Marzian S. Happel M. Wagner U. Müller D. Welzel P. Fehlhaber H.-W. Stärk A. Schütz H.-J. Markus A. Limbert M. van Heijenoort Y. and van Heijenoort J.
Moenomycin A: reactions at the lipid part. New structure–activity relations 5299
Mascagna D. Costantini C. d'Ischia M. and Prota G.
Biomimetic oxidation of the antimelanoma agent 4-S-cysteaminylphenol and related catechol thioethers: isolation and reaction behaviour of novel dihydrobenzothiazine-quinones 8757
Mason J. M. see Furneaux R. H. 2131
Mason P. H. and Emslie N. D.
Some mechanistic and synthetic aspects of the DABCO catalysed rearrangement of allylic esters 12001
Massanet G. M. see Collado I. G. 10531
Massanet G. M. see Collado I. G. 6433
Massanet G. M. see Macías F. A. 5439
Massiot G. see Ley S. V. 12267
Masson S. see Makomo H. 10277
Masuda K. see Chakravarty A. K. 2865
Matamoros R. see Amputch M. A. 5591
Mateo A. I. see de Ancos B. 13857
Matheu Mª I. see Echarri R. 9125
Matheu Mª I. see El-Laghdach A. 12219
Matsuda A. see Hassan A. E. A. 689
Matsuda A. see Iino T. 10397
Matsuda A. see Kakefuda A. 10167
Matsuda F. see Katoh T. 6259
Matsuda F. see Saito S. 6193
Matsuda F. see Saito S. 6209
Matsuda I. see Oikawa H. 13347
Matsumoto T. see Mandai T. 475
Matsumoto T. Aoyama T. Shioiri T. and Osawa E.
Effect of zinc halides on the high stereoselectivity of a new Mannich type cyclization in the tilivalline synthesis. A computational chemical analysis 9775
Matsumoto T. Matsunaga N. Kanai A. Aoyama T. Shioiri T. and Osawa E.
Epimerization of tilivalline 9781
Matsumoto Y. Hayashi T. and Ito Y.
Catalytic asymmetric synthesis of β-hydroxy ketones by palladium-catalyzed asymmetric 1,4-disilylation of α,β-unsaturated ketones 335
Matsunaga N. see Matsumoto T. 9781
Matsunaga S. see Fusetani N. 7765
Matsunaga S. see Ryu G. 13409
Matsunaga S. see Sata N. 1105
Matsuura F. Hamada Y. and Shioiri T.
Total syntheses of phytosiderophores, 3-*epi*-hydroxymugineic acid, distichonic acid A, and 2'-hydroxynicotianamine 265
Matsuura F. Hamada Y. and Shioiri T.
Total synthesis of 2'-deoxymugineic acid and nicotianamine 9457
Matsuura F. Hamada Y. and Shioiri T.
Total synthesis of microginin, an angiotensin-converting enzyme inhibitory pentapeptide from the blue-green alga *Microcystis aerugsinosa* 11303
Matsuura S. see Hayashida O. 13601
Matsuura T. see Koshima H. 13617
Mattern M. R. see Compagnone R. S. 12785
Matuda Y. see Aoyagi Y. 13575
Mátyus P. Fuji K. and Tanaka K.
Density functional calculations on heterocyclic compounds—I. Studies of protonations of 5- and 6-membered nitrogen heterocyclics 2405
Mauge R. see Goument B. 171
Maugras I. see Roux F. 5345
Maurette M.-T. see Tournaire C. 9303
Mauro M. see Danieli B. 8837
Mawson S. D. see Haaima G. 2161
Mawson S. D. see Haaima G. 3557
Maycock C. D. see Afonso C. M. 9671
Mayol L. see Conte M. R. 13469
Mayol L. see Conte M. R. 849
Mayoral J. A. see Altava B. 7535
Mazumdar S. N. Mukherjee S. Sharma A. K. Sengupta D. and Mahajan M. P.
Reactions of 1,3-diaza-1,3-butadienes with haloketenes—rearrangements accompanying [4+2] cycloaddition reactions 7579
Mazzei M. see Balbi A. 4009
M'Boungou-M'Passi A. see Hénin F. 2849
McCarthy J. R. see Edwards M. L. 5579
McCarthy T. D. see Brown R. F. C. 13739
McCarthy T. D. see Brown R. F. C. 5469
McCormick K. D. Attygalle A. B. Xu S.-C. Svatoš A. Meinwald J. Houck M. A. Blankespoor C. L. and Eisner T.
Chilocorine: heptacyclic alkaloid from a coccinellid beetle 2365
McCullough K. J. Tanaka S. Teshima K. and Nojima M.
Polycyclic ozonides and peroxides derived from hexamethyl(Dewar benzene) 7625
McDonald D. Q. see Coxon J. M. 13037
McElhiney S. see Musza L. L. 11369
McGill J. M. and Johnson R.
Conformational analysis of dirithromycin and *epi*-dirithromycin 3857
McIntosh J. M. see Ager D. J. 1975
McIntosh J. M. Thangarasa R. Foley N. K. Ager D. J. Froen D. E. and Klix R. C.
The alkylation of menthyl hippurate and some related materials: a reinvestigation 1967
McKinstry L. see Sheehan S. K. 6155
McKinstry L. and Livinghouse T.
On the asymmetric Rh(I) catalyzed [4+2] cycloisomerization reaction.

Electronic and torsional ligand control of absolute stereoselection 6145
McLean S. see Dookran R. 1983
McMillen H. see Grissom J. W. 4635
McNelis B. J. Sternbach D. D. and MacPhail A. T. Synthetic and kinetic studies of substituent effects in the furan intramolecular Diels–Alder reaction 6767
Mc Nelis E. see Djuardi E. 11793
Medarde M. see Caballero E. 7849
Medici A. see Fantin G. 12973
Meerholtz C. see Grigg R. 359
Meerpoel L. see Van Aken K. J. 5211
Mehta G. Shah S. R. and Venkateswarlu Y. Total synthesis of novel xanthone antibiotics (±)-cervinomycins A_1 and A_2 11729
Mehta V. D. see Barr S. A. 11219
Meier R.-M. and Ganem B. Synthesis of cyathiformines A–C: unusual fungal metabolites derived from chorismic acid 2715
Meints M. see Tochtermann W. 9657
Meinwald J. see McCormick K. D. 2365
Mele A. see Fronza G. 5021
Mele A. see Fronza G. 857
Mele G. see Ciminale F. 12685
Mele G. see Lopez L. 9097
Melguizo M. see Cobo J. 10345
Melguizo M. Sánchez A. Nogueras M. Low J. N. Howie R. A. Andrei G. and De Clercq E. Facile preparation of 9*H*-pyrimido[4,5-*b*][1,4]diazepine derivatives from 4,5-diaminopyrimidines and ethyl pyruvate 13511
Melis S. see Cabiddu S. 6037
Mella M. see Albini A. 575
Mella M. see Fagnoni M. 6401
Mella M. see Faita G. 10955
Mella M. see Freccero M. 2115
Mellor L. C. see Baldwin J. E. 5049
Menéndez J. C. see Villacampa M. 10047
Menéndez J. C. see Pérez J. M. 7923
Menicagli R. see Lardicci L. 12953
Menicagli R. Guagnano V. and Malanga C. Reactivity of 3-nitro-5,6-dihydro-4*H*-pyran with organoalanes: preparation of (*E*)-α,β-ethylenic aldehydes 1871
Menzia J. A. see Krysan D. J. 6163
Merlo V. see G. Guanti 2219
Merlo V. see Guanti G. 12245
Mesic T. M. see Sharma S. 9223
Meselhy M. R. Kadota S. Tsubono K. Hattori M. and Namba T. Biotransformation of shikonin by human intestinal bacteria 3081
Messeguer A. see Bujons J. 7597
Messeguer A. see Tona M. 8117
Messmer A. see Bátori S. 4699
Mestres R. see Aurell M. J. 2571
Mestres R. see Aurell Mª J. 5109
Meteiko B. see Lazarevski G. 12201
Metwally S. A. M. see Aly M. F. 3159
Metwally S. A. M. see Aly M. F. 895
Metz P. and Linz C. Claisen rearrangement of *N*-silyl ketene *N,O*-acetals generated from allyl *N*-phenylimidates 3951
Mévellec L. and Huet F. Novel cyclobutane carbocyclic nucleosides 13145
Meyer C. Marek I. Courtemanche G. and Normant J.-F. Intramolecular carbometallation of organozinc reagents 11665
Meyers A. I. see Gant T. G. 2297
Meyers A. I. see Elworthy T. R. 6089
Mezzina E. see Frenna V. 7315
Michael J. P. see Hunter R. 871
Michael J. P. see Hunter R. 9365
Michael J. P. see Hunter R. 9377
Middlemiss D. and Watson S. P. A medicinal chemistry case study: an account of an angiotensin II antagonist drug discovery programme 13049
Midura W. H. see Mikołajczyk M. 8053
Miettinen J. see Lounasmaa M. 9207
Miettinen J. see Tirkkonen B. 3537
Migallón A. S. see Braña M. F. 10061
Mihailovic M. Lj. see Dabovic M. 1833
Mikami K. Uchida T. Hirano T. Wu Y. and Houk K. N. Different transition structures for [2,3]-Wittig rearrangements of stabilized and unstabilized allyloxy methyl anions: rationale for the dichotomous sense of stereoselection 5917
Mikami Y. see Shigemori H. 8347
Mikerin I. E. see Raifeld Y. E. 8603
Miki S. see Dodziuk H. 3619
Mikołajczyk M. Midura W. H. Grzejszczak S. Montanari F. Cinquini M. Wieczorek M. W. and Karolak-Wojciechowska J. α-Phosphoryl sulfoxides—VIII. Stereochemistry of α-chlorination of α-phosphoryl sulfoxides 8053
Milgrom L. R. Hill J. P. and Dempsey P. J. F. Alkylation of 5,10,15-tris(3,5-di-*t*-butyl-4-hydroxyphenyl)-20-(4-pyridyl)porphyrin 13477
Miller D. J. see Cox G. G. 3195
Miller D. J. Scrowston R. M. Kennewell P. D. and Westwood R. Reactions of nitrile oxides and nitrilimines with imidate esters, the nitrogen atom of which forms part of a heterocyclic ring 5159
Miller M. J. see Guzzo P. R. 11091
Miller M. J. see Guzzo P. R. 8275
Miller S. P. F. see Neder K. M. 9847
Minale L. see D'Auria M. V. 4829
Minami J. see Katoh T. 6221
Minami J. see Katoh T. 6239
Minami T. see Ichikawa J. 11637
Mincione E. see Claudia C. 3259
Minnaard A. J. Wijnberg J. B. P. A. and de Groot A. The synthesis of (+)-hedycaryol, starting from natural (–)-guaiol 4755
Minter D. E. see Yang C. 1919
Minuti L. see Gacs-Baitz E. 10359
Miranda M. A. see García H. 8773
Miranda M. A. see Jiménez M. C. 7635
Mischitz M. Hackinger A. Francesconi I. and Faber K. Enzyme-triggered opening of an epoxide: chemoenzymatic synthesis of (2*R*,5*R*)- and (2*S*,5*R*)-pityol 8661
Mishchenko N. I. see Van Meervelt L. 1889
Mitchell C. M. see Adam W. 13121
Miyamoto Y. see Hayashi M. 4385
Miyatake R. see Sugihara Y. 6495
Miyaura N. see Moriya T. 7961

Miyazawa M. see Terakado M. 5705
Mizuno K. Sakuda S. Nihira T. and Yamada Y. Enzymatic resolution of 2-acyl-3-hydroxymethyl-4-butanolide and preparation of optically active IM-2, the autoregulator from *Streptomyces* sp. FRI-5 10849
Mizuno T. Nishiguchi I. and Sonoda N. Novel synthesis of *S*-alkyl thiocarbamates from amines, carbon monoxide, elemental sulfur and alkyl halides in the presence of a selenium catalyst 5669
Mohamed N. K. see Hassan A. A. 9997
Mohareb R. M. Zohdi H. F. Sherif S. M. and Wardkhan W. W. Heterocyclic synthesis with isothiocyanates: an expeditious synthetic route for polyfunctionally substituted 3-(thiazol-2'-ylidene)pyridines and their fused derivatives 5807
Moïse C. see Szymoniak J. 2841
Mojarrad F. see García H. 8773
Molato S. see Dujardin G. 9037
Molina P. Almendros P. and Fresneda P. M. Iminophosphorane-mediated imidazole ring formation: a new and general entry to aplysinopsin-type alkaloids of marine origin 2241
Molina P. Lidón Mª J. and Tárraga A. Synthetic applications of C,C-bis(iminophosphoranes): preparation of [5+5] rigid bicyclic guanidines and 1,3,6-benzothiadiazepino[3,2-*a*]benzimidazole derivatives 10029
Molina P. López-Leonardo C. and Alcántara J. A straightforward preparation of benz[*f*]indoles by an intramolecular Diels–Alder cycloaddition of unsaturated ketenimines 5027
Molinillo J. M. G. see Macías F. A. 5439
Molinski T. F. see Searle P. A. 3879
Molinski T. F. see Searle P. A. 9893
Möller U. see Jordine G. 139
Möller U. see Jordine G. 4037
Molnár Á. see Bucsi I. 8195
Moloney M. G. see Baldwin J. E. 9411
Moloney M. G. see Baldwin J. E. 9425
Montagnac A. see Kourany-Lefoll E. 3415
Montanari F. see Banfi S. 9025
Montanari F. see Mikołajczyk M. 8053
Montaudon E. et Bourgeois M.-J. Aspect cinétique des substitutions homolytiques intramoléculaires. Décomposition de peroxydes insaturés dérivés du pinane 9335
Montero J.-L. see Serra C. 8427
Montevecchi P. C. see Benati L. 12395
Montgomery D. J. see Coates B. 4025
Montserrat F. X. Grandas A. Eritja R. and Pedroso E. Criteria for the economic large scale solid-phase synthesis of oligonucleotides 2617
Moody C. J. see Cotterill A. S. 7657
Moody C. J. see Cox G. G. 3195
Moody C. J. see Doyle K. J. 3761
Moore H. W. see Yerxa B. R. 6173
Moore R. E. see Mori Y. 11133
Mootoo B. S. see Dookran R. 1983
Mordini A. Pecchi S. and Capozzi G. The synthesis of 4'-thia-α-santalene and 4'-thia-α-santalol through an organometallic approach 6029
Moreau P. Guillaumet G. et Coudert G. Préparation d'oxydes de diaryle diversement fonctionnalisés 3407
Moreira M. J. see Peinador C. 6705
Morelli I. see Bilia A. R. 5181
Moreno M. see Martin X. 6689
Moreno-Mañas M. Fathallah M. Hernández-Fuentes I. Jaime C. Lloris M. E. Marquet J. and Rey-Stolle M. F. Conformational analysis of 4-aryl-2,2,6,6-tetramethyl-heptane-3,5-diones. Dipole moment determinations and molecular mechanics calculations 11213
Moreno-Mañas M. Pérez M. and Pleixats R. Palladium-catalyzed allylation of 3-hydroxyisoxazole, 5-isoxazolone and 5-pyrazolone systems 515
Moretti I. see Forni A. 11995
Morgenstern R. see Engman L. 2929
Mori Y. Kawajiri N. Furukawa H. and Moore R. E. Synthesis and absolute configuration of an isotactic nonamethoxy-1-pentacosene from the blue-green alga *Scytonema ocellatum* 11133
Morimoto T. see Murakami N. 1993
Morin C. The chemistry of boron analogues of biomolecules 12521
Morís F. and Gotor V. Selective aminoacylation of nucleosides through an enzymatic reaction with oxime aminoacyl esters 6927
Morita H. Kayashita T. Kobata H. Gonda A. Takeya K. and Itokawa H. Pseudostellarins A–C, new tyrosinase inhibitory cyclic peptides from *Pseudostellaria heterophylla* 6797
Morita H. Kayashita T. Kobata H. Gonda A. Takeya K. and Itokawa H. Pseudostellarins D–F, new tyrosinase inhibitory cyclic peptides from *Pseudostellaria heterophylla* 9975
Morita H. Kayashita T. Takeya K. and Itokawa H. Conformational analysis of a tyrosinase inhibitory cyclic pentapeptide, pseudostellarin A, from *Pseudostellaria heterophylla* 12599
Morita H. Nagashima S. Takeya K. and Itokawa H. Conformational analysis of an antitumour cyclic pentapeptide, astin B, from *Aster tataricus* 11613
Morita M. see Natori T. 2771
Moriya T. Furuuchi T. Miyaura N. and Suzuki A. A new facile synthesis of 2-substituted 1,3-butadiene derivatives via palladium-catalyzed cross-coupling reaction of 2,3-alkadienyl carbonates with organoboron compounds 7961
Morken P. A. see Burton D. J. 2993
Moro R. F. see Marcos I. S. 12655
Moro R. F. see Urones J. G. 10791
Moroder L. see Korn A. 1717
Moroder L. see Korn A. 8381
Mortlock A. A. see Davies S. G. 6621
Motevalli M. see Abrahams I. 12755
Mothaghineghad E. see Iranpoor N. 1859
Mottaghinejad E. see Iranpoor N. 7299
Moudachirou M. see Brown E. 10309
Mountford P. G. see Bull J. R. 6363
Mountford P. see Atkins E. F. 7253

Mourad A.-F. E. see Hassan A. A. 9997
Mouri M. see Gao Q. 979
Mourral C. see Baret P. 2077
Mucha A. Kafarski P. Plenat F. and Cristau H.-J. The preparation of phosphono peptides containing a phosphonamidate bond 12743
Mudryk B. see Chen F. 12793
Mugnai L. see Evidente A. 10371
Mukherjee S. see Mazumdar S. N. 7579
Mukhopadhyay M. see Maikap G. C. 9145
Mullaney J. T. see Pettit G. R. 12097
Müller D. see Heuer M. 2029
Müller D. see Marzian S. 5299
Müller J. see Bolm C. 4355
Müller J. see Pallagi I. 8809
Muller R. N. see Chaouni-Benabdallah A. 12923
Müller-Fahrnow A. see Bock M. 13125
Müller-Fahrnow A. see Bull J. R. 6347
Müller-Fahrnow A. see Bull J. R. 6363
Mulliez M. and Naudy C. Synthèse de sels d'α-aminoacides sulfiniques substitués à l'azote par un groupe méthane- ou *p*-toluène-sulfonyle 5401
Munro M. H. G. see Perry N. B. 3987
Munro M. H. G. see Trimurtulu G. 3993
Münster I. see Goeppel D. 3687
Muñoz M. see Barrero A. F. 6653
Muñoz Dorado M. see Arseniyadis S. 8399
Murahashi S.-I. Imada Y. and Nishimura K. Palladium-catalyzed carbonylation of allylamines. Synthesis of β,γ-unsaturated amides by one-carbon homologation of allylamines 453
Murai K. see Terakado M. 5705
Murakami N. Morimoto T. Imamura H. Nagatsu A. and Sakakibara J. Enzymatic transformation of glyceroglycolipids into *sn*-1 and *sn*-2 lysoglyceroglycolipids by use of *Rhizopus arrhizus* lipase 1993
Murakami N. see Yoshikawa M. 9619
Murakami N. see Yoshikawa M. 9961
Murakami Y. see Hayashida O. 13601
Murakami Y. see Kamata M. 12821
Muralikrishna C. see Bhalerao U. T. 4019
Muraoka H. see Koike K. 12811
Murase N. see Maruoka K. 3663
Murata I. see Sugihara Y. 6495
Murata N. see Kondo Y. 11803
Murdoch R. see Batchelor M. J. 809
Murphy P. J. see Bertucco A. 8237
Musza L. L. Killar L. M. Speight P. McElhiney S. Barrow C. J. Gillum A. M. and Cooper R. Potent new cell adhesion inhibitory compounds from the root of *Trichilia rubra* 11369
Muzart J. see Hénin F. 2849

Naal R. M. Z. G. see Tedesco A. C. 3071
Nacci A. see Caló V. 7283
Nacci A. see Lopez L. 9097
Nagahata T. see Kakefuda A. 10167
Nagahisa M. Koike K. Narita M. and Ohmoto T. Novel picrotoxane norditerpene lactones from *Picrodendron baccatum* 10859
Naganawa A. Ichikawa Y. and Isobe M. Synthetic studies on tautomycin; synthesis of 2,3-disubstituted maleic anhydride segment 8969
Nagaoka H. Shibuya K. and Yamada Y. Total synthesis of upial, a marine sesquiterpene possessing bicyclo[3.3.1]nonane ring system 661
Nagaraj R. see Renil M. 6681
Nagaraju S. see Srikrishna A. 8765
Nagasawa T. see Nakamura T. 11821
Nagashima S. see Morita H. 11613
Nagata K. see Itoh T. 13089
Nagata Y. see Katoh T. 6221
Nagata Y. see Katoh T. 6239
Nagatsu A. see Murakami N. 1993
Nair V. see Bolon P. J. 7747
Nair V. see Sells T. B. 117
Naito M. see Kobayashi J. 7401
Nájera C. see Alonso D. A. 6603
Nájera C. and Sansano J. M. Dilithiated 2-(chloromethyl)-3-tosylpropene: a new γ-chlorinated allyl sulfone dianion in organic synthesis 3491
Nájera C. and Sansano J. M. A general method for the synthesis of 2-alkyl substituted 1,3-dienes starting from 2-(chloromethyl)-3-tosylpropene 5829
Nakai T. see Tomooka K. 5927
Nakamoto C. see Watanabe Y. 6523
Nakamura K. Kinoshita M. and Ohno A. Effect of solvent on lipase-catalyzed transesterification in organic media 4681
Nakamura T. Nagasawa T. Yu F. Watanabe I. and Yamada H. A new enzymatic synthesis of (*R*)-γ-chloro-β-hydroxy-butyronitrile 11821
Nakatani K. see Akiba T. 3905
Nakatani K. see Fukuda Y. 2793
Nakatani K. see Fukuda Y. 2809
Nakatani K. see Hayashi M. 2821
Nakatani K. see Katoh T. 6259
Nakatani K. see Saito S. 6209
Nakatani K. see Tamura O. 3889
Nakayama Y. see Suginome H. 7771
Nakazawa T. see Sugihara Y. 6495
Namba T. see Meselhy M. R. 3081
Nandi G. see Mahato S. B. 10803
Nanjappan P. Raju N. Ramalingam K. and Nowotnik D. P. An efficient synthesis of some 6-substituted 4,8-diaza-3,3,9,9-tetra-methylundeca-2,10-dione dioximes (propylene amine oximes, PnAOs): ligands for ^{99m}Tc complexes used in structure distribution relationship (SDR) studies 8617
Narasaka K. Hayashi K. and Hayashi Y. Asymmetric synthesis of methylenecyclobutanes and their transformation to medium-sized carbocyclic compounds 4529
Narayanan Namboothiri I. N. see Balasubrahmanyam S. N. 8127
Nardelli M. see Caubère C. 11903
Nardelli M. see Caubère C. 13433
Narisano E. see Banfi L. 11967
Narisano E. see Banfi L. 11983
Narisano E. see G. Guanti 2219
Narisano E. see Guanti G. 12245
Narita M. see Nagahisa M. 10859
Narjes F. see Laschat S. 347
Natori T. Morita M. Akimoto K. and Koezuka Y. Agelasphins, novel antitumor

and immunostimulatory cerebrosides from the marine sponge *Agelas mauritianus* 2771
Natt F. see Calmes M. 6875
Naudy C. see Mulliez M. 5401
Navarro P. see Acerete C. 4765
Nazareno M. A. and Rossi R. A.
$S_{RN}1$ Reactions of 7-iodobicyclo[4.1.0]heptane with carbanions. A novel stereoselective C–C bond formation on cyclopropane rings 9267
Nebel K. see Kristinsson H. 6825
Nebois P. Cherkaoui O. Benameur L. Fillion H. and Fenet B.
2-Ethoxybut-2-enal *N,N*-dimethylhydrazone: a useful reagent for the synthesis of furo[2,3-*f*]quinoline-4,5-diones 8457
Neder K. M. French S. A. and Miller S. P. F.
Synthesis and inhibitory activity of difluoroketone substrate analogs of *N*-myristoyltransferase 9847
Neef G. see Bull J. R. 6363
Negishi E. Copéret C. Sugihara T. Shimoyama I. Zhang Y. Wu G. and Tour J. M.
Palladium-catalyzed carbonylative cyclization via trapping of acylpalladium derivatives with internal enolates. Its scope and factors affecting the C-to-O ratio 425
Nemba R. M. and Ngouhouo F.
On the enumeration of chiral and achiral skeletons of position isomers of homosubstituted monocyclic cycloalkanes with a ring size *n* (odd or even) 6663
Nemes C. see Adam W. 13113
Nemoto H. Shiraki M. and Fukumoto K.
Tandem ring expansion and insertion reaction of alkenic cyclobutanols mediated by palladium—a novel approach to bicyclo[4.3.0]nonane systems 10391
Nenajdenko V. G. Gridnev I. D. and Balenkova E. S.
Perfluoroacylation of alkenes 11023
Nenajdenko V. G. Leshcheva I. F. and Balenkova E. S.
The perfluoroacylation of cyclopropyl-containing alkenes 775
Nenajdenko V. G. and Balenkova E. S.
Perfluoroacylation of alkynes 12407
Nesi R. Giomi D. Turchi S. and Paoli P.
[4+2]- And [2+4]-cycloaddition processes of 4,5-dicyanopyridazine with 2,3-dimethylbuta-1,3-diene 9189
Neuburger M. see Damm W. 7029
Neuburger M. see Tschamber T. 1135
Ngadjui B. T. see Ayafor J. F. 9343
Ngouhouo F. see Nemba R. M. 6663
Nguyen T. B. see Elbaum D. 1503
Nichifor M. and Schact E. H.
Synthesis of peptide derivatives of 5-fluorouracil 3747
Nicolaou K. C. see Clark D. A. 11391
Nicolay J.-F. see Yue C. 3139
Nicoletti R. see Botta M. 3603
Nicoletti R. see Claudia C. 3259
Niel G. see Roux F. 5345
Nielsen H. B. see Bach K. K. 7543
Nierlich M. see Roux M.-C. 8445
Nieto I. see Caamaño O. 2175
Nieto R. M. see Rodríguez J. 11079
Nieuwenhuis S. A. M. Vertegaal L. B. J. de Zoete M. C. and van der Gen A.
Acid-catalyzed solvolysis of polyenol ethers—III. Effect of the alkoxy moiety 13207
Nigawara Y. see Takao K. 5681
Nihira T. see Mizuno K. 10849
Nikaido T. see Jia Z. 11853
Nikishin G. I. see Strelenko Y. A. 10107
Nikitenko A. A. see Raifeld Y. E. 8603
Nilsson K. and Ullenius C.
Stereoselectivity in the 1,4-addition reaction of organocopper reagents to ethyl 3-[(*S*)-2,2-dimethyl-1,3-dioxolan-4-yl]propenoate 13173
Nilsson Y. I. M. see Andersson P. G. 559
Nishide K. Aramata A. Kamanaka T. Inoue T. and Node M.
Total asymmetric syntheses of (+)-blastmycinone and related γ-lactones 8337
Nishiguchi I. see Mizuno T. 5669
Nishikawa T. Ino A. and Isobe M.
Synthetic studies on antibiotic dynemicin A. Synthesis of cyclic enediyne model compound of dynemicin A 1449
Nishikawa T. and Isobe M.
Synthetic studies on dynemicin A. New quinoline synthesis for C, D and E rings 5621
Nishikawa Y. see Toyota M. 10183
Nishikawa Y. see Toyota M. 11153
Nishimura J. see Okada Y. 12159
Nishimura K. see Murahashi S.-I. 453
Nishino E. see Takao K. 5681
Nishiyama K. see Oba M. 10193
Nishiyama S. see Hosono F. 13335
Nishiyama S. see Izawa T. 13593
Nishiyama S. see Tao X. L. 2017
Nishizawa M. see Hatakeyama S. 13369
Niwa H. Watanabe M. Inagaki H. and Yamada K.
Didemnilactones A and B and neodidemnilactone, three new fatty acid metabolites isolated from the tunicate *Didemnum moseleyi* (Herdman) 7385
Niwa H. Watanabe M. Sano A. and Yamada K.
Structures of monodontamides A, B, C, D, E and F, six new alkaloids isolated from the marine gastropod mollusc *Monodonta labio* (Linné) 6805
Nobilec E. Anioł M. and Wawrzenczyk C.
Lactones—I. Hydroxylation of dihydro-β-campholenolactone by *Fusarium culmorum* 10339
Noda K. Hosoya N. Irie R. Yamashita Y. and Katsuki T.
Catalytic asymmetric oxidation of sulfides using (salen)manganese(III) complex as a catalyst 9609
Noda Y. see Ichikawa J. 11637
Node M. see Nishide K. 8337
Noe M. C. see Coppola B. P. 93
Nogales D. F. Anstine D. T. and Lightner D. A.
Synthesis and unusual properties of expanded bilirubin analogs 8579
Noguchi M. see Kuroki Y. 1063
Noguchi Y. see Hatakeyama S. 13369
Nogueras M. see Cobo J. 10345
Nogueras M. see Melguizo M. 13511
Noheda P. see Barnhart R. W. 4335
Nojima M. see McCullough K. J. 7625
Nomizu M. Otaka A. Burke, Jr T. R. and Roller P. P.
Synthesis of phosphono-methylphenylalanine and phosphotyrosine containing cyclic peptides as inhibitors of

protein tyrosine kinase/SH2 interactions 2691
Nomura N. see Yanagisawa A. 6017
Normant J.-F. see Meyer C. 11665
Norte M. Padilla A. Fernández J. J. and Souto M. L. Structural determination and biosynthetic origin of two ester derivatives of okadaic acid isolated from *Prorocentrum lima* 9175
North M. see Hogg D. J. P. 7933
Norton C. L. see Cotterill A. S. 7657
Norton S. J. see Yang C. 1919
Notaro G. Piccialli V. Sica D. and Smaldone D. Studies towards the synthesis of polyoxygenated steroids. Reaction of 7,9(11)-diene steroids with RuO_4 4835
Nöth H. see Knorr R. 5845
Nouguier R. see Lesueur C. 5369
Novi M. see Dell'Erba C. 11239
Novi M. see Dell'Erba C. 3529
Nowak-Thompson B. and Gould S. J. Biosynthesis of the pseudobactin chromophore from tyrosine 9865
Nowotnik D. P. see Nanjappan P. 8617
Noyori R. Organometallic ways for the multiplication of chirality 4259
Nozoe S. see Ohta T. 5659
Nuber B. see Kiefer M. 7109
Nudelman N. S. and Doctorovich F. Electron transfer in the reactions of aryllithium compounds with carbon monoxide 4651
Nuesca Z. M. see Bolon P. J. 7747
Nugent S. J. see Black D. St. C. 10497
Nukui S. see Sato Y. 371
Nummelin K. see Taskinen E. 11693
Nuzillard J.-M. see Ley S. V. 12267
Nyström J.-E. see Söderberg B. C. 61

Oba M. and Nishiyama K. Radical-based deoxygenation of aliphatic alcohols via thioxocarbamate derivatives 10193
Obara Y. see Saito N. 3915
O'Brien L. see Krishnamurthy G. 1341
Obuchi K. see Asaoka M. 655
Ocaña B. Espada M. and Avendaño C. *N*-Oxides of azaanthraquinones 9505
O'Donnell M. J. Wu S. and Huffman J. C. A new active catalyst species for enantioselective alkylation by phase-transfer catalysis 4507
Ogata K. see Ishikawa T. 9287
Ogawa N. see Tanaka J. 9989
Ogawa S. see Takao K. 5681
Ogiwara A. see Kobayashi J. 7401
Ogiwara A. see Uozumi Y. 4293
Oguni N. see Hayashi M. 2821
Oguni N. see Hayashi M. 4385
O'Hanlon P. J. see Forrest A. K. 10739
Ohmoto T. see Jia Z. 11853
Ohmoto T. see Koike K. 12811
Ohmoto T. see Nagahisa M. 10859
Ohno A. see Nakamura K. 4681
Ohno M. see Yamamoto Y. 7783
Ohsawa A. see Itoh T. 13089
Ohseto F. see Harada T. 13377
Ohshiro Y. see Hirao T. 10207
Ohta A. see Aoyagi Y. 13575
Ohta T. Endo Y. Kikuchi R. Kabuto C. Harada N. and Nozoe S. Absolute stereochemistry of benzocycloheptenone derivatives from *Cnidoscolus phyllacanthus* 5659
Oikawa H. Matsuda I. Kagawa T. Ichihara A. and Kohmoto K. Absolute configuration of main chain of AAL-toxins 13347
Oishi M. see Maruoka K. 8983
Okada K. see Inoue S. 2729
Okada K. see Inoue S. 2753
Okada M. see Itoh T. 13089
Okada Y. Ishii F. Kasai Y. and Nishimura J. Stereoselective synthesis of *meta*- and three-bridged cyclophanes with intramolecular [2+2] photocycloaddition by using the steric effect of methoxyl group 12159
Okahara Y. see Hatanaka Y. 8301
Okide G. B. Corrigendum 12047
Okita T. and Isobe M. Synthesis of the pentacyclic intermediate for dynemicin A and unusual formation of spiro-oxindole ring 11143
Oku A. see Harada T. 7987
Olah G. A. see Bucsi I. 8195
Olesker A. see Herczegh P. 13671
Oliva I. M. see Marcos I. S. 12655
Oliveira E. R. see von Holleben M. L. A. 973
Oliveros E. see Tournaire C. 9303
Olsen C. E. see Prasad A. K. 10579
Olsen C. E. see Prasad A. K. 2231
Onda K. see Satoh T. 4957
O'Neil P. A. see Kohnke F. H. 9113
Onishi J. C. see Schwartz R. E. 1675
Ono K. see Hayashi M. 2821
Ooi T. see Maruoka K. 3663
Ooi T. Maruoka K. and Yamamoto H. Unprecedented stereochemical control in the intramolecular ene-reactions of δ,ε-unsaturated aldehydes using exceptionally bulky organoaluminum reagents: elucidation of the transition state 6505
Opitz A. see Katritzky A. R. 6005
Oppolzer W. and Robyr C. Synthesis of (±)-hirsutene by a catalytic allyl-palladium–alkyne cyclization/carbonylation cascade 415
Ordoñez M. see Juaristi E. 4937
Ortega M. J. see Zubía E. 8153
Ortíz A. see Farfán N. 9951
Ortuño R. M. see Bassa J. 8143
Ortuño R. M. see de Echagüen C. O. 12457
Ortuño R. M. see Ibarzo J. 9825
Osa T. see Anzai J. 4039
Osawa E. see Matsumoto T. 9775
Osawa E. see Matsumoto T. 9781
Osman F. H. see Shabana R. 6975
O'Sullivan A. C. see Kristinsson H. 6825
O'Sullivan A. C. see Loubinoux B. 2047
O'Sullivan N. see Cotterill A. S. 7657
O'Sullivan N. see Knölker H.-J. 10893
Otaka A. see Nomizu M. 2691
Ottolina G. see Bertinotti A. 13165
Otvos, Jr L. see Urge L. 2373
Ouazzani J. see Arseniyadis S. 8399
Ourisson G. see Arseniyadis S. 8399
Øverås H. see Gundersen L.-L. 9743
Overkleeft H. S. van Wiltenburg J. and Pandit U. K. A facile transformation of sugar lactones to azasugars 4215
Overman L. E. see Laschat S. 347
Ozaki S. see Watanabe Y. 6523

Özlü Y. Cladingboel D. E. and Parsons P. J.
Tandem radical cyclisations: synthesis of lysergic acid derivatives 2183
Ozturk T. Povey D. C. and Wallis J. D.
Short intermolecular S...S contacts in a reaction product from the cyclic sulfate ester of dimethyl L-tartrate and 2-thioxo-1,3-dithiole-4,5-dithiolate 11205

Paddon-Row M. N.
On the origin of transannular interactions in diketones and methylene-ketones, as detected by ^{13}C NMR spectroscopy: an *ab initio* MO study 10813
Padilla A. see Norte M. 9175
Pagani I. see Marotta E. 7645
Pagnoni U. M. see Boni M. 7897
Paintner F. F. see Wanner K. Th. 3113
Païs M. see Kourany-Lefoll E. 3415
Pakrashi S. C. Achari B. Dutta P. K. Chakrabarti A. K. Giri C. Saha S. and Basa S. C.
Marine products from Bay of Bengal: constituents of the sponge *Psammaplysilla purpurea* 12009
Pakulski Z. Pierozynski D. and Zamojski A.
Reaction of sugar thiocyanates with Grignard reagents. New synthesis of thioglycosides 2975
Palacios F. Aparicio D. and de los Santos J. M.
An effective strategy for the preparation of α,β-unsaturated hydrazones and pyrazole derivatives. Synthetic applications of β-functionalized phosphorus compounds 12727
Palacios J. C. see Avalos M. 3273
Pale P. Bouquant J. Chuche J. Carrupt P. A. and Vogel P.
π-Facial diastereoselection in [4+2]-cycloadditions of 3,4-epoxy-2-methyl-eneoxolanes with oxadienes: a short synthesis of spiroketals 8035
Paleo M. R. Domínguez D. and Castedo L.
Synthesis of 4-aryl-2-benzazepine-1,5-diones by photocyclization of *N*-(2-arylethyl)phthalimides 3627
Pallagi I. Toró A. and Müller J.
The mechanism of the Gibbs reaction—II. The *ortho* ↔ *ortho* 2,4-cyclohexadiene-1-one rearrangement of the reaction product of 2,6-di-*tert*-butyl-4-chlorophenol and 2,6-dichlorobenzoquinone *N*-chloroimine 8809
Palme H.-J. see Schwarz S. 10709
Palmieri G. see Bartoli G. 9831
Palmisano G. see Danieli B. 6941
Palmisano G. see Danieli B. 8837
Palmisano G. D'Anniballe P. and Santagostino M.
Indole alkaloids. A combined chemical and enzymatic route for eburnane ring construction: formal synthesis of (−)-eburnamonine 9487
Paloma L. G. see D'Auria M. V. 4829
Palomino P. L. see Barrero A. F. 13239
Palumbo G. see Caputo R. 7265
Pan J.-W. see Py S. 6881
Pandey B. Rao A. T. Dalvi P. V. and Kumar P.
Studies on cyclobutyl bond cleavage by adjacent ketyl radical generated under PET conditions 3835
Pandey B. Rao A. T. Dalvi P. V. and Kumar P.
Efficient cleavage of cyclopropyl bond by adjacent ketyl radical generated under PET conditions 3843
Pandey G. Devi Reddy G. and Kumaraswamy G.
Photoinduced electron transfer (PET) promoted cyclisations of 1-[*N*-alkyl-*N*-(trimethylsilyl)methyl]amines tethered to proximate olefin: mechanistic and synthetic perspectives 8185
Pandit U. K. see Boogaard A. T. 2551
Pandit U. K. see Boogaard A. T. 4811
Pandit U. K. see Hilhorst E. 7837
Pandit U. K. see Hilhorst E. 8863
Pandit U. K. see Overkleeft H. S. 4215
Panfil I. Krajewski J. Gluzinski P. Stefaniak L. and Chmielewski M.
Addition of *N*-benzylhydrazine to sugar δ-enlactones 7219
Pang Z. see Garlaschelli L. 3571
Pani G. see Fringuelli F. 11499
Pannecoucke X. Parmentier G. Schmitt G. Dolle F. and Luu B.
Synthesis of the phosphodiester of 3β(7β-hydroxycholesterol) and of 5'(3'deoxy, 3'azido-thymidine) 1173
Pannecoucke X. Schmitt G. and Luu B.
Synthesis of phosphoric acid diesters of 7β-hydroxy-cholesterol and of carbohydrates 6569
Pannecouque C. Vandendriessche F. Rozenski J. Janssen G. Busson R. Van Aerschot A. Claes P. and Herdewijn P.
Synthesis, enzymatic stability and physicochemical properties of oligonucleotides containing a *N*-cyano-guanidine linkage 7231
Pansini M. see Albrizio S. 783
Panteleeva E. V. see Vaganova T. A. 10011
Panu A. M. see Joshi B. S. 12283
Paoli P. see Nesi R. 9189
Papanov G. Y. see Rodríguez B. 5451
Papchikhin A. and Chattopadhyaya J.
New diastereospecific synthesis of 2',3'-dideoxy-2'- or 3'-C_2-branched- or 2',3'-α-fused-isoxazolidine nucleosides directly from the seconucleoside 5279
Papin N. see Udding J. H. 8853
Paquette L. A. see Shen C.-C. 4949
Paquette L. A. Sauer D. R. Edmondson S. D. and Friedrich D.
A concise route to the tetracyclic core of phorbol 4071
Pardhasaradhi M. see Rama Devi A. 2543
Parekh S. I. see Barton D. H. R. 639
Parés A. see Solé D. 9769
Paris J.-M. see Genêt J. P. 497
Paris J. M. see Largeron M. 6307
Parisi M. F. see Kohnke F. H. 9113
Parkin S. see Perry N. B. 3987
Parlow J. J.
Syntheses of tetrahydro-naphthalenes—II 3297
Parmar V. S. see Prasad A. K. 10579
Parmar V. S. see Prasad A. K. 2231
Parmentier G. Schmitt G. Dolle F. and Luu B.
A convergent synthesis of 2'-*O*-methyl uridine 5361
Parmentier G. Schmitt G. Dollé F. and Luu B.
Corrigendum 7341
Parmentier G. see Pannecoucke X. 1173
Parra A. see Bretón J. L. 2917
Parra A. see Dueñas J. 10761
Parra M. see Aurell Mª J. 5109
Parrain J.-L. see Boussoufi A. 12609

Parrilla A. see Villuendas I. 12673
Parsons P. J. see Özlü Y. 2183
Parsons P. J. and Caddick S. A free radical approach to cyclopentanone and spirocyclic systems: development of a 1,5 allylic abstraction–cyclisation sequence 13523
Pascal Y.-L. see Hamon L. 161
Pascal, Jr R. A. and Ho D. M. Molecular structures of host–guest complexes with Rebek's diacid 8559
Passarella D. see Danieli B. 6941
Passarella D. see Danieli B. 8837
Pastor A. Alajarin R. Vaquero J. J. Alvarez-Builla J. Fau de Casa-Juana M. Sunkel C. Priego J. G. Fonseca I. and Sanz-Aparicio J. Synthesis and structure of new pyrido[2,3-*d*]pyrimidine derivatives with calcium channel antagonist activity 8085
Pastormerlo E. see Auricchio S. 7589
Pasutto F. see Bertucco A. 8237
Patel G. see Elgendy S. 3803
Patel G. see Green D. 5099
Paterson I. see Bernardi A. 1227
Pathak T. see Sakthivel K. 13251
Patil B. B. see Grovenstein, Jr E. 5971
Patissou J. see D'Auria M. V. 4829
Patonay T. see Adam W. 13113
Patro B. see Rao Ch. S. 5783
Patro B. Deb B. Ila H. and Junjappa H. Rearrangement studies on 3,3-bis(methylthio)-1-(arylcyclopropyl)-2-propen-1-ols: synthesis of functionalized cyclopentenes and polyene esters 255
Pattenden G. see Buckley G. M. 11781
Pätzel M. see Bohrisch J. 10701
Pearce S. see Davies S. G. 7521
Pearson W. H. and Walavalkar R. Synthesis of (±)-tylophorine by the intramolecular cycloaddition of an azide with an ω-chloroalkene 12293
Pecchi S. see Mordini A. 6029
Pedatella S. see Caputo R. 7265
Pedregal C. see Marcos A. 12941
Pedrini P. see Fantin G. 12973
Pedro J. R. see Cardona L. 5527
Pedrocchi-Fantoni G. see Fronza G. 857
Pedroso E. see Montserrat F. X. 2617
Pedulli G. F. see Cabiddu S. 4001
Peet N. P. see Farr R. A. 1033
Peeters L. D. Jacobs S. G. Eevers W. and Geise H. J. Copper (I) catalysed formation of 3-methoxy-2,5-dimethylthiophene and 3,4-dimethoxy-2,5-dimethylthiophene 11533
Pehk T. J. see Aleksandrov A. M. 8597
Peinador C. Moreira M. J. and Quintela J. M. An efficient iminophosphorane-mediated synthesis for pyrido-[3',2':4,5]thieno[3,2-*d*]-pyrimidine derivatives 6705
Pellacani L. see Barani M. 11235
Pellacani L. see Barani M. 3829
Pelletier S. W. see Joshi B. S. 12283
Pelosi G. see Florio S. 5037
Pelter A. Drake R. and Stewart M. Hindered organoboron groups in organic chemistry—XXIX. The effect of hindered triorganoboranes on anionic butadiene polymerisations 13829
Pelter A. Ward R. S. and Storer N. P. The asymmetric synthesis of an isomer of podophyllotoxin 10829
Pelter A. and Drake R. Hindered organoboron groups in organic chemistry—XXVII. Preparations and some properties of alkylbis(2,6-dimethyl-4-methoxyphenyl)-boranes ((DMP)$_2$BR) 13775
Pelter A. and Drake R. Hindered organoboron groups in organic chemistry—XXVIII. The solvolyses of bis(2,6-dimethyl-4-methoxyphenyl)-organylboranes, (DMP)$_2$BR 13801
Peña B. see Bueno A. B. 9355
Perales A. see de la Torre M. C. 13553
Perales A. see Luis J. G. 1217
Perales A. see Rodríguez B. 2289
Perales A. see Rodríguez B. 5451
Peregrina J. M. see Avenoza A. 10021
Peregrina J. M. see Avenoza A. 12989
Pérez J. M. see Villacampa M. 10047
Pérez J. M. Vidal L. Grande M. T. Menéndez J. C. and Avendaño C. Regioselectivity of the Diels–Alder reactions of 2,5,8(1*H*)-quinolinetriones 7923
Pérez M. see Moreno-Mañas M. 515
Pérez S. see Atanes N. 11257
Pérez-Pérez M.-J. and Camarasa M.-J. Alkylidene carbenes as intermediates in the synthesis of highly functionalized branched-chain sugars and nucleosides 7269
Periasamy M. see Bhatt M. V. 3575
Periasamy M. Kanth J. V. B. and Prasad A. S. B. Convenient procedures for the asymmetric reductions utilizing α,α-diphenyl-pyrrolidinemethanol and borane complexes generated using the I_2/$NaBH_4$ system 6411
Periasamy M. Reddy M. R. and Devasagayaraj A. Simple, convenient methods for the preparation of alkyne–$Co_2(CO)_6$ complexes from $CoBr_2$ for application in Pauson–Khand cyclopentenone synthesis 6955
Pérot G. see Imhaoulène S. 12913
Perry N. B. see Trimurtulu G. 3993
Perry N. B. Ettouati L. Litaudon M. Blunt J. W. Munro M. H. G. Parkin S. and Hope H. Alkaloids from the Antarctic sponge *Kirkpatrickia varialosa*—I. Variolin B, a new antitumour and antiviral compound 3987
Persky R. see Albeck A. 6333
Pète J.-P. see Hénin F. 2849
Peters E.-M. see Giacometti A. 7913
Peters J. A. see Lammers H. 8103
Peters K. see Adam W. 9009
Peters K. see Giacometti A. 7913
Petersen H. see Andersen K. E. 8699
Petit Y. see Grosjean F. 9325
Petrenko A. E. see Aleksandrov A. M. 8597
Petri A. see Pini D. 11321
Petri A. see Pini D. 205
Petrich S. A. Qian Z. Santiago L. M. Gupton J. T. and Sikorski J. A. The application of unsymmetrical vinylogous iminium salts and related synthons to the preparation of

monosubstituted triazolo[1,5-*a*]pyrimidines 12113
Petrillo G. see Dell'Erba C. 11239
Petrillo G. see Dell'Erba C. 3529
Petrzilka M. see Bajgrowicz J. A. 7461
Petter R. C. see Jewell, Jr C. F. 3849
Pettit G. R. Thornton T. J. Mullaney J. T. Boyd M. R. Herald D. L. Singh S.-B. and Flahive E. J. The dolastatins—XX. A convenient synthetic route to dolastatin 15 12097
Pettit G. R. see Zhang H. 10201
Peynircioglu B. see Akhmedov I. M. 2099
Peyronel J.-F. Grisoni S. Carboni B. Courgeon T. and Carrié R. 1,3-Cycloaddition of chiral azomethine ylides generated from 2-(*tert*-butyl)-3-methylimidazolidin-4-one 189
Pfaltz A. see Zhou Q.-L. 4467
Pfeiffer C. see Schwarz S. 10709
Pham K. M. see Kadow J. F. 1519
Phillips D. R. see Chiu F. C. K. 889
Piccialli V. see Notaro G. 4835
Piermatti O. see Fringuelli F. 11499
Pierozynski D. see Pakulski Z. 2975
Pierre J.-L. see Baret P. 2077
Piet D. P. Franssen M. C. R. and de Groot A. Synthesis of 8-methyl-*trans,trans*-cyclodeca-3,7-dien-1β-ol and biotransformation into 4aβ-methyl-1,2,3,4,4a,5,6,7,8,8aα-decahydronaphthalene-1,7β-diol by *Cichorium intybus* 3169
Pietrusiewicz K. M. Salamonczyk G. M. Bruzik K. S. Wieczorek W. Corrigendum 573
Pika J. and Faulkner D. J. Four sesquiterpenes from the South African nudibranch *Leminda millecra* 3065
Pilati T. see Beccalli E. M. 12697
Pillai V. N. R. see Renil M. 6681
Pineschi M. see Calvani F. 12999
Pingli L. and Vandewalle M. Cyclohexane polyols: enantioselective synthesis of (+)-fortamine and of pseudosugars 7061
Pinho e Melo T. M. V. D. see Gilchrist T. L. 13709
Pini D. Petri A. Rosini C. Salvadori P. Giorgi R. Di Bugno C. Turbanti L. and Marchetti F. The absolute stereochemistry at C1 and C2 of *cis*-(+)-2-hydroxy-2-phenyl-cyclohexanecarboxylic acid (cicloxilic acid) 205
Pini D. Petri A. and Salvadori P. Heterogeneous catalytic asymmetric dihydroxylation of olefins: a new polymeric support and a process improvement 11321
Piozzi F. see Rodríguez B. 2289
Pirrung F. O. H. Hiemstra H. Speckamp W. N. Kaptein B. and Schoemaker H. E. Synthesis of medium-sized lactones by the copper(I)chloride/2,2'-bipyridine-catalyzed cyclization of di- and trichloroacetates 12415
Píš J. Hykl J. Budešínsky M. and Harmatha J. Regioselective synthesis of 20-hydroxyecdysone glycosides 9679
Pitarch M. see Costero A. M. 5381
Pitchumani K. Velusamy P. Sabithamala S. and Srinivasan C. Modification of chemical reactivity upon cyclodextrin encapsulation: asymmetric bromination of chalcone and benzylideneacetone 7903
Pitchumani K. Velusamy P. and Srinivasan C. Selectivity in sodium borohydride reduction of coumarin encapsulated in β-cyclodextrin 12979
Pius K. see Rajeev K. G. 5425
Piva O. Direct conversion of β,γ-unsaturated esters into lactones induced by TMS-I 13687
Piva O. see Enders D. 3349
Pizzo F. see Fringuelli F. 11499
Planas M. see Bassa J. 8143
Plavec J. see Garg N. 4167
Plavec J. see Rong J. 4921
Plé N. Turck A. Couture K. and Queguiner G. Metalation of diazines—X. First halogen migration during metalation of pyrimidines. Unusual halogen–lithium exchange with LTMP. New synthesis of Leshmaniacides 10299
Pleixats R. see Moreno-Mañas M. 515
Plenat F. see Mucha A. 12743
Plumet J. see Alcaide B. 5555
Poh B.-L. and Tan C. M. Complexation of amino acids by cyclotetrachromotropylene in aqueous solution—importance of CH–π and π–π interactions 3453
Pohnert G. and Boland W. Pericyclic reactions in nature: evidence for a spontaneous [1.7]-hydrogen shift and an 8πe electrocyclic ring closure in the biosynthesis of olefinic hydrocarbons from marine brown algae (Phaeophyceae) 10235
Polborn K. see Knorr R. 5845
Pollini G. P. see Barco A. 10491
Pollini G. P. see Barco A. 11743
Pollini G. P. see Barco A. 2583
Polozov G. I. see Zaitsev V. G. 6377
Poncet J. see Roux F. 5345
Ponzini F. see Annunziata R. 2939
Pordesimo E. O. see Crews P. 13567
Pordesimo E. O. see Jaspars M. 7367
Pore V. S. see Hazra B. G. 2523
Porta C. see Sartori G. 10587
Porwisiak J. and Dmowski W. Reactions of trifluoromethyl-pyridines with alkyllithium reagents. Directing effects of the trifluoromethyl groups 12259
Posada P. see Braña M. F. 10061
Povey D. C. see Ozturk T. 11205
Pozzi G. see Banfi S. 9025
Pradhan S. K. and Sankaran R. Counterion effect on stereochemistry of reduction of cycloalkanones by alkali metals in ammonia 3149
Prakash T. P. Kunte S. S. and Ganesh K. N. Self cleavage of C8-histamino-r(UpA) promoted by $ZnCl_2$: mechanistic studies on a designed ribonuclease mimic 11699
Praly J.-P. Faure R. Joseph B. Kiss L. and Rollin P. Synthesis, structure and enzymatic evaluation of new spiro oxathiazole sugar derivatives 6559
Pramanik B. see Schwartz R. E. 1675
Prandi C. see Canepa C. 8161
Prandi C. and Venturello P. 1-Substituted 1-ethoxy dienes obtained by reaction of 1,1-diethoxybut-2-ene with electrophiles in the presence of the mixed metal base LICKOR 12463

Prasad A. K. Tyagi O. D. Wengel J. Boll P. M. Olsen C. E. Gupta S. Sharma N. K. Bisht K. S. and Parmar V. S. Lignans and neolignans from stems of *Piper wightii* 10579
Prasad A. K. Tyagi O. D. Wengel J. Boll P. M. Olsen C. E. Sharma N. K. Bisht K. S. Gupta S. and Parmar V. S. Lignans and neolignans from stems and fruits of *Piper wightii* 2231
Prasad A. S. B. see Periasamy M. 6411
Prathapan S. see Lindsey J. S. 8941
Prati F. see Forni A. 11995
Predieri G. see Sartori G. 10587
Prenner R. H. see Binder W. H. 749
Price M. A. see Mah S. C. 1361
Priego J. G. see Pastor A. 8085
Procopio A. see Chiacchio U. 5503
Prokai-Tatrai K. Zoltewicz J. A. and Kern W. R. Synthesis and conformational analysis of a bridged anabasine and related compounds. A nuclear magnetic resonance spectroscopy and molecular modeling study 9909
Prota G. see Mascagna D. 8757
Protopopova M. N. see Doyle M. P. 1665
Protopopova M. N. see Doyle M. P. 4519
Ptatschek V. see Griesbeck A. G. 701
Puar M. S. see Joshi B. S. 12283
Puciová M. Solcániová E. and Toma Š. Electrophilic substitutions on some ferrocenylheteroarenes 5765
Puebla P. see Caballero E. 7849
Purdy D. F. see Bolon P. J. 7747
Puri N. see Rousse B. 1777
Py S. Pan J.-W. and Khuong-Huu F. Cleavage reactions of 10-deacetylbaccatin III. Retrosynthetic approach to the total synthesis of taxol derivatives 6881
Pyne S. G. Safaei-G J. Hockless D. C. R. Skelton B. W. Sobolev A. N. and White A. H. *exo* Diastereoselective Diels–Alder reactions of (*R*)-2-phenyl-4-methylene-oxazolidin-5-one 941
Pyne S. G. and Hajipour A. R. An unexpected rearrangement of a β-amino sulfoxide under Pummerer reaction conditions 13501

Qamar R. see Yang C. 1919
Qian X. see Boteju L. W. 2391
Qian Z. see Petrich S. A. 12113
Qiao L.-X. see Ye B. 9061
Quéguiner G. see Leroy C. 13135
Queguiner G. see Plé N. 10299
Quici S. see Banfi S. 9025
Quintela J. M[a] see Peinador C. 6705
Quintero J.-L. R. see Aurich H. G. 3929
Quintero J.-L. R. see Aurich H. G. 3943
Quiñoá E. see Dopeso J. 3813
Quiñones W. see Luis J. G. 1217

Raabe G. see Hoffmann N. 11167
Rabi-Barakay A. and Ben-Ishai D. Intramolecular amidoalkylation of aromatics—III. Synthesis of conformationally restricted bridged peptide analogues of Phe–Gly 10771
Rabi-Barakay A. and Ben-Ishai D. Corrigendum 12281
Raghavan S. and Subba Rao G. S. R. Synthesis based on cyclohexadienes—X. Synthesis of 5,5-dimethyl-7-methoxy-4-oxatricyclo-[4.3.1.$0^{3,7}$]decan-2-ones 2599
Rahman M. M. see Gabbutt C. D. 2507
Rahmouni M. Yeung Lam Ko Y. Y. C. Carrié R. et Tonnard F. Réaction de P-phényl C-aminophosphaalcènes avec l'oxyde de *para*-chlorobenzonitrile, évolution thermique des adduits 12625
Raifeld Y. E. Nikitenko A. A. Arshava B. M. Mikerin I. E. Zilberg L. L. Vid G. Ya. Lang, Jr S. A. and Lee V. J. Synthesis of 3-substituted (azido, acylthio, chloro or fluoro)-2,3-dideoxy-D-*erythro*-pentoses and 3-methyl-3-substituted-2,3-dideoxy-D-*erythro*-pentoses 8603
Raimondi L. see Annunziata R. 2939
Raimondi L. see Annunziata R. 5821
Raimondi L. see Annunziata R. 9471
Rajagopal D. see Coxon J. M. 13037
Rajagopal D. see Marchand A. P. 9933
Rajagopal S. see Allen Gnanaraj G. 9447
Rajappa S. see Deshpande S. R. 10367
Rajarison F. see Bennetau B. 1179
Rajeev K. G. Shashidhar S. M. Pius K. and Bhatt V. M. Reaction of normal and pseudo 2-formylbenzene-sulfonyl chlorides with amines: experimental and theoretical studies on the structure of 2-formyl benzenesulfonamides in solid, solution and gas phases 5425
Raju N. see Nanjappan P. 8617
Raju S. B. see Basavaiah D. 4137
Rali T. see Jaspars M. 7367
Rama F. see Confalonieri G. 3235
Ramachandran M. S. Eswaramoorthy D. and Sureshkumar D. Influence of substituents on the mechanism of oxidation of amino acids 9495
Rama Devi A. Iyengar D. S. and Pardhasaradhi M. A new convergent synthesis of WS-5995-B, an anticoccidial antibiotic from *Streptomyces auranticolor* 2543
Rama Krishna P. see Basavaiah D. 10521
Ramalingam K. see Nanjappan P. 8617
Ramana D. V. and Kantharaj E. Mass spectrometer as a probe in the synthesis of 2-substituted benzimidazoles 2485
Ramón D. J. see Gil J. F. 3437
Ramón D. J. see Gil J. F. 7307
Ramsewak R. see Dookran R. 1983
Rani B. R. see Bhalerao U. T. 4019
Ranu B. C. Sarkar A. Saha M. and Chakraborty R. Silica gel supported zinc borohydride. A novel reagent for hydration of unactivated alkenes and alkynes 6579
Rao A. T. see Pandey B. 3835
Rao A. T. see Pandey B. 3843
Rao Ch. S. Chandrasekharam M. Patro B. Ila H. and Junjappa H. Facile one pot thermal dehydration and dethioacetalization of β-hydroxy-dithioacetals with dimethyl sulphoxide: synthesis of α,β-unsaturated aldehydes 5783
Raptopoulou C. P. see Bojilova A. 13023

Rasała D. see Krygowski T. M. 13155
Rasmussen M. see Haque M. R. 5535
Rasmussen P. G. see Subrayan R. P. 2641
Rasset C. and Vaultier M. Diels–Alder cycloaddition of 3-borylpropenoic acid derivatives and their use as synthetic equivalents of *E*-β-hydroxy acrylic acid and *E*-β-hydroxy vinylamine 3397
Rastelli A. Bagatti M. and Gandolfi R. Theoretical and experimental study of the regioselectivity of the reaction of diazomethane with allene 5561
Rathore R. Bosch E. and Kochi J. K. Selective nitration versus oxidative dealkylation of hydroquinone ethers with nitrogen dioxide 6727
Ravikumar V. T. Wyrzykiewicz T. K. and Cole D. L. Synthesis of oligonucleotides via phosphoramidite approach utilizing 2-diphenylmethyl-silylethyl (DPSE) as a phosphorus protecting group 9255
Raymo F. M. see Kohnke F. H. 9113
Read R. W. see Kassiou M. 2497
Rebolledo F. see García M. J. 6935
Reddy K. V. see Swingle N. M. 4455
Reddy M. M. see Maikap G. C. 9145
Reddy M. R. see Periasamy M. 6955
Reddy M. V. see Vankar Y. D. 11057
Redhouse A. D. see Lamara K. 5515
Redpath J. see Frederickson M. 5495
Reedijk J. see Jungk D. 11187
Reese C. B. see Buck I. M. 9195
Reetz M. T. see Frenking G. 11197
Regitz M. see Fuchs E. 759
Reich H. J. Borst J. P. and Dykstra R. R. Solution ion pair structure of 2-lithio-1,3-dithianes in THF and THF–HMPA 5869
Reiser O. see Albrecht K. 383
Reixach N. see Coll J. 7247
Renard P. see Caubère C. 13433
Renil M. Nagaraj R. and Pillai V. N. R. Gel-phase peptide synthesis on a new high-capacity tetraethyleneglycol diacrylate-crosslinked polystyrene support: synthesis of pardaxin 16-33 6681
Renoux B. see Gesson J.-P. 1165
Renson M. J. see Jakobs A. E. 9315
Rescifina A. see Chiacchio U. 5503
Rescifina A. see Chiacchio U. 6671
Resnati G. see Bravo P. 8827
Resta S. see Bosman C. 13847
Rey-Stolle M. F. see Moreno-Mañas M. 11213
Reynolds W. F. see Dookran R. 1983
Riant O. Kagan H. B. and Ricard L. Asymmetric base-catalyzed cycloaddition between anthrone and some dienophiles 4543
Ribbons D. W. and Sutherland A. G. (+)-Muconolactone from arene biotransformation in *Pseudomonas putida:* production, absolute configuration and enantiomeric purity 3587
Ribó J. M. Crusats J. and Marco M. Reactivity of pyrrole pigments—XVI. Mesobiliverdin IXα and mesobilirubin IXα bridged between the propionic acid substituents 3967
Ricard L. see Riant O. 4543
Ricca A. see Auricchio S. 7589
Riche C. see Audrain H. 1469
Riche C. see Herczegh P. 13671
Rigal L. see Bauchat P. 7815
Righetti P. see Faita G. 10955
Righetti P. P. see Desimoni G. 1821
Righi P. see Confalonieri G. 3235
Righi P. see Marotta E. 7645
Riguera R. see Dopeso J. 3813
Ring S. see Schwarz S. 10709
Rise F. see Gundersen L.-L. 9743
Rissom B. see Fitjer L. 10879
Riva R. see Banfi L. 11967
Riva R. see Banfi L. 11983
Riva R. see Guanti G. 11945
Riva S. see Bertinotti A. 13165
Rivas F. see Bretón J. L. 2917
Robert F. see Farfán N. 9951
Roberts E. see Horwell D. C. 4225
Robin J. P. see Dhal R. 1153
Robinson A. J. see Abrahams I. 12755
Robles-Díaz R. see Santoyo-González F. 2877
Robyr C. see Oppolzer W. 415
Rodios N. A. see Bojilova A. 13023
Rodríguez B. see de la Torre M. C. 13553
Rodríguez B. de la Torre M. C. Bruno M. Fazio C. Piozzi F. Savona G. Perales A. and Arnold N. A. Rearranged neo-clerodane diterpenoids from *Teucrium brevifolium* 2289
Rodríguez B. de la Torre M. C. Perales A. Malakov P. Y. Papanov G. Y. Simmonds M. S. J. and Blaney W. M. Oxirane-opening reactions of some 6,19-oxygenated 4α,18-epoxy-neo-clerodanes isolated from *Teucrium.* Biogenesis and antifeedant activity of their derivatives 5451
Rodríguez J. Nieto R. M. Hunter L. M. Diaz M. C. Crews P. Lobkovsky E. and Clardy J. Variation among known kalihinol and new kalihinene diterpenes from the sponge *Acanthella cavernosa* 11079
Rodríguez J. H. see Escribano A. 7567
Rodríguez J. see Crews P. 13567
Rodríguez P. see Armesto X. L. 2265
Rodriguez R. see Arseniyadis S. 8399
Rodriguez-Franco M. I. see Acerete C. 4765
Rodríguez-Franco M. I. see Martín-Muñoz M. G. 6999
Rodríguez-Hahn L. see Esquivel B. 11593
Rohaan J. see Dols P. P. M. A. 3473
Rohr M. G. see Aurich H. G. 7417
Roller P. P. see Nomizu M. 2691
Rollin P. see Praly J.-P. 6559
Romagnoli R. see Barco A. 10491
Romagnoli R. see Barco A. 11743
Romagnoli R. see Barco A. 2583
Romañach M. see Fariña F. 5169
Romeo G. see Chiacchio U. 6671
Romeo R. see Chiacchio U. 5503
Rong J. Roselt P. Plavec J. and Chattopadhyaya J. The synthesis and conformation of 2'- and 3'-hypermodified tricyclic nucleosides and their use in the synthesis of novel 2'- or 3'-isomeric 4(7)-substituted isoxazolidine-nucleosides 4921
Rong J. see Xi Z. 5255
Ronzini L. see Florio S. 5037
Roselt P. see Rong J. 4921

Roselt P. D. see Easton C. J. 7327
Rosini C. see Pini D. 205
Rosini G. see Confalonieri G. 3235
Rosini G. see Marotta E. 7645
Rosmanitz P. Eisenhardt S. Bats J. W. and Engels J. W. New proline derived chiral building blocks for nucleoside methylphosphonate synthesis 5719
Rosnati V. see Di Vona M. L. 2949
Rosnati V. see Di Vona M. L. 8203
Rossi R. see Bellina F. 4853
Rossi R. see Bellina F. 5189
Rossi R. see Bellina F. 12029
Rossi R. A. see Nazareno M. A. 9267
Rossignol S. see Dujardin G. 9037
Rossiter B. E. see Swingle N. M. 4455
Rossouw W. Hundt A. F. Steenkamp J. A. and Ferreira D. Oligomeric flavanoids—XVII. Absolute configurations of flavan-3-ols and 4-arylflavan-3-ols via the Mosher method 12477
Roumestant M.-L. see Akssira M. 9051
Roussakis C. see D'Auria M. V. 4829
Rousse B. Puri N. Viswanadham G. Agback P. Glemarec C. Sandström A. Sund C. and Chattopadhyaya J. Solution conformation of hexameric and heptameric lariat-RNAs and their self-cleavage reactions which give products mimicking those from some catalytic RNAs (ribozymes) 1777
Rousse B. Sund C. Glemarec C. Sandström A. Agback P. and Chattopadhyaya J. Remarkable conformational change promoted by 3'-ethylphosphate at the branch-point of a tetrameric lariat-RNA dictates its self-cleavage reaction modelling some catalytic RNAs (ribozymes) 8711
Routledge A. see Haaima G. 2161
Routledge A. see Haaima G. 3557
Roux F. Maugras I. Poncet J. Niel G. et Jouin P. Synthèse de la dolastatine 10 et de la [*R*-Doe]-dolastatine 10 5345
Roux M.-C. Wartski L. Nierlich M. Vigner D. and Lance M. Easy access to highly functionalized bicyclic lactones and ketones 8445
Roxburgh C. J. The synthesis and stereochemistry of some new medium-ring nitrogen-containing alcohols and related compounds 13199
Roy S. Das I. Bhanuprakash K. and Gupta B. D. S_H2' Reaction in organocobaloximes: synthesis and 1,3-rearrangement of *exo*-methylene alicyclic allyl sulfones 1847
Roy S. K. see Mahato S. B. 9439
Royer J. see Yue C. 3139
Rozenski J. see Augustyns K. 1189
Rozenski J. see Pannecouque C. 7231
Rubio A. see Bueno A. B. 9355
Rubiralta M. see Diez A. 6585
Rudi A. see Gellerman G. 12959
Rudi A. see Talpir R. 4179
Rudolph-Böhner S. see Korn A. 1717
Rudolph-Böhner S. see Korn A. 8381
Ruhland T. see Hoffmann R. W. 6049
Rühmann A. and Wentrup C. Synthesis of a photoactivatable 9-*Z*-oleic acid for protein kinase C labeling 3785
Ruiz D. see Cardona L. 5527
Russell A. T. see Baldwin J. E. 12015
Ruth W. see Börner A. 10419
Ruzziconi R. see Bauer P. J. 1707
Rybalova T. V. see Tkachev A. V. 11459
Rycroft D. S. see Ayafor J. F. 9343
Ryu G. Matsunaga S. and Fusetani N. Discodermins F–H, cytotoxic and antimicrobial tetradecapeptides from the marine sponge *Discodermia kiiensis*: structure revision of discodermins A–D 13409

Saá J. M. see Atanes N. 11257
Sabapathy Mohan R. T. Gopalakrishnan M. and Sekar M. Kinetics and mechanism of oxidation of some substituted *trans*-cinnamic acids by pyridinium chlorochromate—a non-linear Hammett plot 10933
Sabapathy Mohan R. T. Gopalakrishnan M. and Sekar M. Kinetics and mechanism of Os(VIII)-catalysed oxidation of some substituted *trans*-cinnamic acids by chloramine-T in alkaline medium—a non-linear Hammett plot 10945
Sabater M.-J. see García H. 8773
Sabithamala S. see Pitchumani K. 7903
Safaei-G J. see Pyne S. G. 941
Safi M. see Blart E. 505
Sagnard I. see Sasaki N. A. 7093
Saha M. see Ranu B. C. 6579
Saha S. see Pakrashi S. C. 12009
Saha-Möller C. R. see Adam W. 13121
Saha-Möller C. R. see Adam W. 9009
Sahu N. P. see Mahato S. B. 9439
Said M. A. Kumara Swamy K. C. Chandra Mohan K. and Venkata Lakshmi N. Oxidative addition reactions of cyclic chlorophosphites and arsenites with diols and 1,2-quinones: X-ray structure of the phosphocin ($ClCH_2CMe_2$-CH_2O)P(O) {(O-2,4-(*t*-bu)$_2C_6H_2$)$_2CH_2$} 6989
Saigo K. see Hashimoto Y. 8317
Saito I. see Sugiyama H. 1311
Saito N. Obara Y. Aihara T. Harada S. Shida Y. and Kubo A. Synthesis of saframycins—IX. An efficient synthesis of the ABC ring of safracins 3915
Saito S. Tamura O. Kobayashi Y. Matsuda F. Katoh T. and Terashima S. Synthetic studies on quinocarcin and its related compounds—I. Synthesis of enantiomeric pairs of the ABE ring systems of quinocarcin 6193
Saito S. Tanaka K. Nakatani K. Matsuda F. Katoh T. and Terashima S. Synthetic studies on quinocarcin and its related compounds—II. Synthesis of an enantiomeric pair of the ABC ring system of quinocarcin 6209
Saito Y. see Ishikawa T. 9287
Saito Y. see Kobayashi S. 9629
Saitou N. see Shoji N. 4973
Sakai K. see Kato K. 3315
Sakai S. see Takayama H. 11813
Sakai S. see Takayama H. 8363
Sakakibara J. see Murakami N. 1993
Sakamoto T. see Baba Y. 5645
Sakamoto T. see Kondo Y. 11803
Sakthivel K. Pathak T. and Suresh C. G. Reactions of 2',3'-di-*O*-mesyl-

lyxo-uridine with secondary amines: first report on the one-pot conversion of mesylated nucleosides to enaminonucleosides and the crystal structure of α-enamine 13251
Sakuda S. see Mizuno K. 10849
Sakurada E. see Ishikawa T. 9287
Sakurai H. see Suginome H. 8293
Saladino R. see Botta M. 3603
Saladino R. see Claudia C. 3259
Salamonczyk G. M. see Pietrusiewicz K. M. 573
Salani G. see Arnone A. 13485
Saleh M. A. Compernolle F. Toppet S. and Hoornaert G. J. The synthesis of 2,7-substituted octahydro-2*H*-pyrido[1,2-*a*]pyrazines, analogues of quinolizidine and piperazine drugs 1811
Salo J. see Lounasmaa M. 9207
Salo J. see Tirkkonen B. 3537
Salvá J. see Zubía E. 8153
Salvadori P. see Pini D. 11321
Salvadori P. see Pini D. 205
Salwinska E. see Suwinski J. 5741
Samat A. see Acerete C. 4765
Samoshin V. V. see Strelenko Y. A. 10107
Sancéau J.-Y. Dhal R. et Brown E. Lignanes—XVII. Recherches sur la synthèse totale d'un norcyclonéolignane, la métaséquirine-B 3363
Sánchez A. see Cobo J. 10345
Sánchez A. see Melguizo M. 13511
Sánchez J. F. see Barrero A. F. 6653
Sánchez-Baeza F. see Bujons J. 7597
Sánchez-Baeza F. see Coll J. 7247
Sánchez-Baeza F. see Tona M. 8117
Sánchez-Montero J. M. see Hernáiz M. J. 10749
Sandhoff K. see Kolter T. 13425
Sandosham J. and Undheim K. Stannylation in the electrophilic 2- and 4/6-pyrimidine position and the use of stannylpyrimidines in coupling and tin–lithium exchange reactions 275
Sandström A. see Rousse B. 1777
Sandström A. see Rousse B. 8711
San Feliciano A. see Caballero E. 7849
Sankar C. see Lal B. 9167
Sankaran R. see Pradhan S. K. 3149
SanMartín R. de Marigorta E. M. and Domínguez E. A convenient alternative route to β-aminoketones 2255
Sano A. see Niwa H. 6805
Sansano J. M. see Alonso D. A. 6603
Sansano J. M. see Nájera C. 3491
Sansano J. M. see Nájera C. 5829
Santaballa J. A. see Armesto X. L. 2265
Santaballa J. A. see Armesto X. L. 10509
Santagostino M. see Palmisano G. 9487
Santa María M. D. see Escolástico C. 12489
Santaniello E. see Ferraboschi P. 3251
Santaniello E. see Ferraboschi P. 10539
Santiago L. M. see Petrich S. A. 12113
Santillan R. see Farfán N. 9951
Santoyo-González F. García-Calvo-Flores F. Isac-García J. Hernández-Mateo F. García-Mendoza P. and Robles-Díaz R. Synthesis and transformations of 2-deoxy-2-iodo-pyranosyl isothiocyanates from glycals 2877
Sanz C. R. see Braña M. F. 10061
Sanz-Aparicio J. see Pastor A. 8085
Saquet M. see Makomo H. 10277
Sarkar A. see Ranu B. C. 6579
Sarkar S. and Ghosh S. Carbon–carbon bond cleavage via carbon centred radical in strained tricyclo[5.2.1.$0^{2,6}$]-decenes. A facile route to bridged eight membered rings related to taxanes 921
Sartori G. Maggi R. Bigi F. Arienti A. Porta C. and Predieri G. Metal-template *ortho*-regioselective synthesis of 2'-hydroxyphenylpyridine-methanols 10587
Sasai H. Yamada Y. M. A. Suzuki T. and Shibasaki M. Syntheses of (*S*)-(–)-pindolol and [3'-^{13}C]-(*R*)-(–)-pindolol utilizing a lanthanum–lithium–(*R*)-BINOL ((*R*)-LLB) catalyzed nitroaldol reaction 12313
Sasaki A. see Suginome H. 8293
Sasaki H. see Hosoya N. 4311
Sasaki H. Irie R. Hamada T. Suzuki K. and Katsuki T. Rational design of Mn–salen catalyst—II. Highly enantioselective epoxidation of conjugated *cis*-olefins 11827
Sasaki N. A. and Sagnard I. A novel method for chirospecific synthesis of 2,5-disubstituted pyrrolidines 7093
Sasaki T. see Kakefuda A. 10167
Sasaki T. see Kobayashi J. 7401
Sasaki T. see Shigemori H. 8347
Sasaki T. see Tsuda M. 4667
Sata N. Asai N. Matsunaga S. and Fusetani N. Erylusamines, IL-6 receptor antagonists, from the marine sponge, *Erylus placenta* 1105
Sathiyanarayanan K. I. see Gurumurthy R. 13731
Sato T. and Yonemochi S. Metal-catalyzed organic photoreactions. Chemo- and regioselectivities in the $CuCl_2$-induced photooxidation of olefins 7375
Sato Y. see Hashimoto Y. 8317
Sato Y. Nukui S. Sodeoka M. and Shibasaki M. Asymmetric Heck reaction of alkenyl iodides in the presence of silver salts. Catalytic asymmetric synthesis of decalin and functionalized indolizidine derivatives 371
Satoh T. Itoh N. Gengyo K. Takada S. Asakawa N. Yamani Y. and Yamakawa K. New method for generation of β-oxido carbenoid via ligand exchange reaction of sulfoxides: a versatile procedure for one-carbon homologation of carbonyl compounds 11839
Satoh T. Kitoh Y. Onda K. Takano K. and Yamakawa K. Ligand exchange reaction of sulfoxides in organic synthesis: a novel method for generation of magnesium enolates and its application to synthesis of α-halocarboxylic acid derivatives and α-haloaldehydes 4957
Sauer D. R. see Paquette L. A. 4071
Sauter M. see Adam W. 11441
Sauter M. see Adam W. 8393
Savéant J.-M. Mechanisms and reactivity in electron transfer induced aromatic nucleophilic substitution. Recent advances 10117
Savic V. see Grigg R. 5489
Savignac M. see Blart E. 505

Savignac M. see Genêt J. P. 497
Saville-Stones E. A. Turner R. M. Lindell S. D. Jennings N. S. Head J. C. and Carver D. S. Total synthesis of carbocyclic analogues of coformycin 6695
Savoia D. see Boga C. 4709
Savona G. see Rodríguez B. 2289
Šavrda J. Chertanova L. and Wakselman M. Activation of *N,N*-bis(alkoxycarbonyl) amino acids. Synthesis of *N*-alkoxycarbonyl amino acid *N*-carboxyanhydrides and *N,N*-dialkoxycarbonyl amino acid fluorides, and the behavior of these amino acid derivatives 5309
Sawamura M. Hamashima H. and Ito Y. Asymmetric Michael reaction of α-cyano carboxylates catalyzed by a rhodium complex with *trans*-chelating chiral diphosphine PhTRAP 4439
Schaade M. see Csuk R. 11885
Schaade M. see Csuk R. 3333
Schacht E. H. see Nichifor M. 3747
Schaeffer P. Fache-Dany F. Trifilieff S. Trendel J. M. and Albrecht P. Characterisation of novel 3-carboxyalkyl-steranes occurring in geological samples 12633
Schäfer B. see Buschmann E. 2433
Schäfer T. see Enders D. 3349
Schakel M. see Schmitz R. F. 5933
Schank K. Abdel Wahab A.-M. A. Bügler S. Eigen P. Jager J. and Jost K. Donor substituted sulfonyl carbenes—II. Organothio sulfonyl carbenes 3721
Scharf H.-D. see Brunne J. 6819
Scharf H.-D. see Hoffmann N. 11167
Schatzman R. C. see Jaspars M. 7367
Scheidt W. R. see Wagner R. W. 11097
Scheuer P. J. Ciguatera and its off-shoots—chance encounters en route to a molecular structure 3
Scheuer P. J. see Yeung B. K. S. 12593
Schiano A.-M. see Boivin J. 1769
Schlag W.-R. Vilsmaier E. and Maas G. Functionalized chloroenamines in aminocyclopropane synthesis—XV. Synthesis of conformationally rigid analogues of [1,4'-bipiperidine]-4'-carboxamide—a common pharmacophoric group 3123
Schlapbach A. see Bernardi A. 1227
Schlosser M. see Bauer P. J. 1707
Schlosser M. see Desponds O. 5881
Schlosser M. see Shi G. 1129
Schlosser M. see Truong-Nguyen T. M. T. 7827
Schlosser M. and Faigl F. Pyrrolobenzoxazepine ring construction through metalation and electrophilic substitution of *N*-(2-hydroxymethylphenyl)-pyrrole 2071
Schmid W. see Binder W. H. 749
Schmid W. see Binder W. H. 10407
Schmidpeter A. see Bansal R. K. 7675
Schmidt A. see Csuk R. 11885
Schmidt B. see Seebach D. 4363
Schmidt G. see Waldmann H. 11865
Schmidt M. see Eger K. 8371
Schmidt N. see Jungk D. 11187
Schmitt G. see Pannecoucke X. 1173
Schmitt G. see Pannecoucke X. 6569
Schmitt G. see Parmentier G. 5361
Schmitt G. see Parmentier G. 7341
Schmitz F. J. see Crews P. 13567
Schmitz F. J. see Jaspars M. 7367
Schmitz R. F. de Kanter F. J. J. Schakel M. and Klumpp G. W. Mixed tetramers of *sec*-butyllithium and 3-methoxypropyllithium; degree of intracluster etheration and reactivity of *sec*-butyllithium towards ethylene 5933
Schneider F. W. see Griesbeck A. G. 701
Schoemaker H. E. see Pirrung F. O. H. 12415
Schofield C. J. see Lawlor E. J. 8737
Schole C. see Schole J. 1125
Schole C. see Schole J. 3743
Schole J. und Schole C. Glycerin-2-diethylphosphat durch photochemische Umsetzung von Dihydroxyaceton mit Diethylphosphorsäure 3743
Schole J. Schole C. Eikemeyer J. and Krebs H. C. Diethyl isopropyl and isopropenyl phosphate via differently generated ketyl radicals of acetone reacting with diethyl phosphoric acid 1125
Schreiber K. see Le thi Quyen 10923
Schreiber S. L. see Elbaum D. 1503
Schröer J. and Welzel P. Asymmetric synthesis of a key synthetic precursor for (+)-strigol and sorgolactone 6839
Schubert F. see Boche G. 5889
Schulz G. see Zimmer R. 13655
Schulz M. see Adam W. 9009
Schütz H.-J. see Marzian S. 5299
Schwartz D. J. see Coppola B. P. 93
Schwartz R. E. Helms G. L. Bolessa E. A. Wilson K. E. Giacobbe R. A. Tkacz J. S. Bills G. F. Liesch J. M. Zink D. L. Curotto J. E. Pramanik B. and Onishi J. C. Pramanicin, a novel antimicrobial agent from a fungal fermentation 1675
Schwarz S. Ring S. Weber G. Teichmüller G. Palme H.-J. Pfeiffer C. Undeutsch B. Erhart B. and Grawe D. Synthesis of 13-ethyl-11-methylene-18,19-dinor-17α-pregn-4-en-20-yn-17-ol (desogestrel) and its main metabolite 3-oxo desogestrel 10709
Scilimati A. see Caló V. 7283
Scott A. I. The discovery of nature's pathway to vitamin B_{12}. A 25 year odyssey 13315
Scott A. I. see Wang J. 6181
Scrowston R. M. see Miller D. J. 5159
Scudder M. L. see Bishop R. 8749
Scully M. F. see Elgendy S. 3803
Searle P. A. Jamal N. M. Lee G. M. and Molinski T. F. Configurational analysis of new furanosesquiterpenes from *Dysidea herbacea*. Assignment of absolute stereochemistry 3879
Searle P. A. and Molinski T. F. Scalemic 12-hydroxy-ambliofuran and 12-acetoxyambliofuran, five tetracyclic furanoditerpenes and a furanosesterterpene from *Spongia* sp. 9893
Seebach D. see Weber B. 6117
Seebach D. see Weber B. 7473

Seebach D. Beck A. K. Schmidt B. and Wang Y. M. Enantio- and diastereoselective titanium-TADDOLate catalyzed addition of diethyl and bis(3-buten-1-yl) zinc to aldehydes. A full account with preparative details 4363
Segura C. see Bassa J. 8143
Seibel J. see Wagemann R. 731
Seibel J. Vilsmaier E. Fröhlich K. Maas G. and Wagemann R. Functionalized chloroenamines in aminocyclopropane synthesis—XIII. Azaannulated cyclopropanes—rigid building blocks for oligoamines 715
Seishi T. see Toyota M. 10183
Seishi T. see Toyota M. 1093
Seishi T. see Toyota M. 3673
Sekar M. see Sabapathy Mohan R. T. 10933
Sekar M. see Sabapathy Mohan R. T. 10945
Seki J. see Kakefuda A. 10167
Selliah R. D. see Gilbert J. C. 1651
Sells T. B. see Bolon P. J. 7747
Sells T. B. and Nair V. Synthetic approaches to novel *cis* and *trans* dideoxynucleosides of the apiose family 117
Semeyn C. see Lolkema L. D. M. 7115
Semeyn C. see Lolkema L. D. M. 7129
Senboku H. see Suginome H. 13101
Senderowitz H. Golender L. and Fuchs B. New supramolecular host systems—II. 1,3,5,7-Tetraoxadecalin, 1,2-dimethoxyethane and the *gauche* effect reappraised. Theory versus experiment 9707
Senderowitz H. Linden A. Golender L. Abramson S. and Fuchs B. New supramolecular host systems—I. A structural and conformational study of the 1,3,5,7-tetraoxadecalin core system 9691
Sengupta D. see Mazumdar S. N. 7579
Seo W. see Ando K. 13081
Seoane C. see Marco J. L. 3509
Séquin U. see Esser T. 3709
Serci A. see Cabiddu S. 6037
Sereda S. V. see Garlyauskajte R. Yu. 6891
Serra C. Dewynter G. Montero J.-L. and Imbach J.-L. 3'-C-Phosphonates as nucleotides analogues. Synthesis starting from original C-phosphonosugars (in ribo- and deoxyribo-series) 8427
Serra R. see Confalonieri G. 3235
Serramedan D. see Marc F. 3381
Serratrice G. see Baret P. 2077
Servi S. see Fronza G. 857
Seto H. see Yun B.-S. 11659
Setty-Fichman M. see Blum J. 8505
Sévenet T. see Kourany-Lefoll E. 3415
Sevin A. and Giessner-Prettre C. On the nature of the electronic interaction between conjugated nucleophiles and electrophiles 5387
Sfulcini A. see Desimoni G. 1821
Sha C.-K. and Wang D.-C. Synthesis of the parent compound and *N*-substituted derivatives of 1*H*-benz[*de*]isoquinoline and benz[*de*]isoquinolinium-1-ide 7495
Shabana R. Osman F. H. and Atrees S. S. Organophosphorus compounds—XV. The reaction of 2,4-bis(4-methoxyphenyl)-1,3,2,4-dithiadiphosphetane-2,4-disulfide (Lawesson's reagent) with aromatic dihydroxy compounds. Simple new route to 1,3,2-dioxaphospholane-2-sulfide 6975
Shah S. R. see Mehta G. 11729
Shah Z. see Atta-ur-Rahman 12109
Shaik S. see Blum J. 8505
Shakkour E. see Becker J. Y. 12773
Shapiro G. see Chengzhi C. 5735
Sharma A. K. see Mazumdar S. N. 7579
Sharma N. D. see Barr S. A. 11219
Sharma N. K. see Prasad A. K. 10579
Sharma N. K. see Prasad A. K. 2231
Sharma O. P. see Mahato S. B. 9439
Sharma S. Mesic T. M. and Martin R. A. Thiophilic reactions of pseudopterolide: potential implications for its biological activity 9223
Sharma S. K. and Gutsche C. D. Heavily-substituted calix[4]arenes derived from *p*-cyanomethylcalix[4]arene 4087
Sharpless K. B. Coelacanths and catalysis 4235
Shashidhar S. M. see Rajeev K. G. 5425
Shawali A. S. see Farag A. M. 5091
Sheehan S. K. Jiang M. McKinstry L. Livinghouse T. and Garton D. A flexible, highly efficient method for the preparation of homochiral oxazaphospholidine-boranes 6155
Sheffer-Dee-Noor S. and Ben-Ishai D. The synthesis of D,L *p*-vinylphenylglycine by amidoalkylation, and its reactions 7009
Shen C.-C. and Paquette L. A. Development of a strategy for the synthesis of the spherical hydrocarbon *p*-[$4^2.5^8$]decahedrane 4949
Sherif S. M. see Erian A. W. 1877
Sherif S. M. see Mohareb R. M. 5807
Shevtsov S. A. see Tkachev A. V. 11459
Shi G. Takagishi S. and Schlosser M. Metalated fluoropyridines and fluoroquinolines as reactive intermediates: new ways for their regioselective generation 1129
Shi Z. see Hung C.-Y. 10685
Shibasaki M. see Sasai H. 12313
Shibasaki M. see Sato Y. 371
Shibuya K. see Nagaoka H. 661
Shida Y. see Saito N. 3915
Shiga F. see Kondo Y. 11803
Shigemori H. see Kobayashi J. 7401
Shigemori H. see Zhang H. 10201
Shigemori H. Madono T. Sasaki T. Mikami Y. and Kobayashi J. Nakijiquinones A and B, new antifungal sesquiterpenoid quinones with an amino acid residue from an Okinawan marine sponge 8347
Shima K. see Yamashita T. 9275
Shimizu I. and Ishii H. Synthesis of α-fluoroketones based on palladium-catalyzed decarboxylation reactions of allyl β-keto carboxylates 487
Shimoyama I. see Negishi E. 425
Shindo M. see Inoue I. 4429
Shing T. K. M. and Gillhouley J. G. Enantiospecific synthesis of (+)-altholactone and its three stereoisomers 8685

Shinkai S. see Harada T. 13377
Shintani T. see Hatakeyama S. 13369
Shiohara K. see Maruoka K. 8983
Shioiri T. see Matsumoto T. 9775
Shioiri T. see Matsumoto T. 9781
Shioiri T. see Matsuura F. 11303
Shioiri T. see Matsuura F. 265
Shioiri T. see Matsuura F. 9457
Shipton M. R. see Bell D. 6643
Shiraki M. see Nemoto H. 10391
Shoji N. Umeyama A. Saitou N. Yoshikawa K. Kan Y. and Arihara S.
Hosenkosides A, B, C, D, and E, novel baccharane glycosides from the seeds of *Impatiens balsamina* 4973
Short K. see Ziegler, Jr C. B. 12085
Shteingarts V. D. see Vaganova T. A. 10011
Shuto S. see Hassan A. E. A. 689
Shuto S. see Kakefuda A. 10167
Sica D. see Notaro G. 4835
Sidky M. M. see Abdou W. M. 3595
Sie E.-R. H. B. see Cox G. G. 3195
Sierks M. R. see Jespersen T. M. 13449
Signorini R. see Bertucco A. 8237
Sigurdsson S. Th. and Hopkins P. B.
Synthesis and reactions with DNA of a family of DNA–DNA affinity cross-linking agents 12065
Sikorski J. A. see Petrich S. A. 12113
Silvani A. see Danieli B. 6941
Silverton J. V. see Hutchinson K. D. 6129
Simmonds M. S. J. see de la Torre M. C. 13553
Simmonds M. S. J. see Rodríguez B. 5451
Simon C. Hosztafi S. and Makleit S.
Stereoselective synthesis of β-naltrexol, β-naloxol, β-naloxamine, β-naltrexamine and related compounds by the application of the Mitsunobu reaction 9757
Simon C. D. see Hunter R. 9365
Simon H. see Eck R. 13631
Simon H. see Eck R. 13641
Simon H. see Veith M. 6859
Simon L. D. see Garraffo H. M. 11329
Simpkins N. S. see Brumwell J. E. 13533
Simpson J. see Bandarage U. K. 3463
Singh J. see Grovenstein, Jr E. 5971
Singh M. see Jain R. 907
Singh M. see Maity S. K. 6965
Singh N. B. Singh R. J. and Singh N. P.
Organic solid state reactivity 6441
Singh N. P. see Singh N. B. 6441
Singh R. and Cooper R. D. G.
Synthesis and biological evaluation of 6-azabicyclo[3.2.0]hept-2-ene derivatives as potential antibacterial agents and β-lactamase inhibitors 12049
Singh R. J. see Singh N. B. 6441
Singh S.-B. see Pettit G. R. 12097
Singh V. K. see Gupta A. D. 13725
Sinisterra J. V. see Hernáiz M. J. 10749
Sinnes J.-L. see Loubinoux B. 2047
Sinou D. see Blart E. 505
Sinou D. see Goux C. 10321
Sitkowski J. see Dodziuk H. 3619
Sivagnanam S. see Aly M. F. 895
Skelton B. W. see Pyne S. G. 941
Skog K. and Wennerström O.
Zinc *meso*-tetraphenylporphyrin as shift reagent for NADH-models 8227
Skrydstrup T. see Audrain H. 1469
Skrydstrup T. see Jespersen T. M. 13449
Slawin A. N. Z. see Hodson H. F. 1899
Smaldone D. see Notaro G. 4835
Smalley R. K. see Lamara K. 5515
Smith C. R. Justice D. E. and Malpass J. R.
Synthesis and tautomerism of 9-azabicyclo[4.2.1]nonan-1-ols (norhomotropan-1-ols), *N*-alkyl and 7,8-dehydro-derivatives, and oxabicyclic analogues 11039
Smith D. R. see Constable E. C. 7799
Smith P. see Koshti N. 2657
Smith R. A. J. see Bandarage U. K. 3463
Smitrovich J. H. see Wipf P. 1935
Snyder J. K. see Yu S.-S. 11601
Sobolev A. N. see Pyne S. G. 941
Sodeoka M. see Sato Y. 371
Söderberg B. C. Austin L. R. Davis C. A. Nyström J.-E. and Vågberg J. O.
Regioselective palladium-catalyzed allylation of fulvenes 61
Soejima S. see Baba Y. 5645
Sohár P. see Kóbor J. 4873
Solans X. see Diez A. 6585
Solans X. see González-Cameno A. M. 10971
Solbakken M. see Fischer P. M. 2277
Solcániová E. see Puciová M. 5765
Solé D. Parés A. and Bonjoch J.
An unexpected transformation by reaction of congested α-(*o*-nitrophenyl)ketones with tris(dimethylamino)methane. A new heterocyclic system: 6,11b-methanopyrrolo[2,3-*e*][1]benzazocine 9769
Somfai P.
An enantioselective total synthesis of (+)-altholactone from diethyl L-tartrate 11315
Somfai P. see Tanner D. 9135
Sonawane H. R. Bellur N. S. Kulkarni D. G. and Ayyangar N. R.
Photochemical rearrangement of α-chloro-propiophenones to α-arylpropanoic acids: studies on chirality transfer and synthesis of (*S*)-(+)-ibuprofen and (*S*)-(+)-ketoprofen 1243
Sondengam B. L. see Ayafor J. F. 9343
Sone H. see Ishiwata H. 12853
Song Y.-L. see Xu J.-H. 1199
Sonoda N. see Mizuno T. 5669
Sørensen P. O. see Andersen K. E. 8699
Sorokin V. D. see Marchand A. P. 9933
Sóti F. Kajtár-Peredy M. Kardos-Balogh Z. Incze M. Keresztury G. Czira G. and Szántay C.
Synthesis of *Vinca* alkaloids and related compounds—LXXI. Synthesis of (±)-cuanzine, (±)-decarbomethoxyapocuanzine, and some of their epimers 8209
Sotler-Pecan T. see Stavber S. 12235
Soto J. see Jiménez M. C. 7635
Sotomayor N. Vicente T. Domínguez E. Lete E. and Villa M.-J.
An improved method for the generation of imines and enamides. Application to the synthesis of 3-arylisoquinoline derivatives 2207
Sottofattori E. see Balbi A. 4009
Soulet B. see Marc F. 3381
Souto M. L. see Norte M. 9175
Spadari S. see Botta M. 3603

Spadoni G. see Balsamini C. 12375
Spadoni G. see Balsamini C. 3773
Spagnolo P. see Benati L. 12395
Spalluto G. see Barco A. 11743
Spalluto G. see Barco A. 2583
Spande T. F. see Garraffo H. M. 11329
Spassov S. see Georgieva A. 9399
Speckamp W. N. see Pirrung F. O. H. 12415
Speckamp W. N. see Udding J. H. 1907
Speckamp W. N. see Udding J. H. 8853
Speckamp W. N. see Lolkema L. D. M. 7115
Speckamp W. N. see Lolkema L. D. M. 7129
Speight P. see Musza L. L. 11369
Spek A. L. see van Maanen H. L. 11509
Spilling C. D. see Marples B. A. 13461
Spilling C. D. see Marzabadi C. H. 6783
Spinelli D. see Frenna V. 7315
Spyroudis S. and Tarantili P. Phenylicdoniophenolates from 1,3-dihydroxybenzene derivatives 11541
Sridharan V. see Ardill H. 5067
Sridharan V. see Grigg R. 359
Srikrishna A. Hemamalini P. and Venkateswarlu S. A regiospecific radical annulation strategy to functionalised chiral bicyclo[3.3.1]nonanes 8781
Srikrishna A. Venkateswarlu S. Nagaraju S. and Krishnan K. Isomerisation of 1-methylene-2-methyl-2-(2-oxopropyl)-cyclohexanes to 2-methylene-1-methyl-1-(2-oxopropyl)-cyclohexanes by ene and retroene reaction 8765
Srinivasan C. see Allen Gnanaraj G. 9447
Srinivasan C. see Pitchumani K. 12979
Srinivasan C. see Pitchumani K. 7903
Srivastav S. Deepak D. and Khare A. Three novel pregnane glycosides from *Leptadenia reticulata* Wight and Arn 789
Stadler M. Anke H. and Sterner O. Six new antimicrobial and nematicidal bisabolanes from the basidiomycete *Cheimonophyllum candidissimum* 12649
Stamos I. K. see Kotzamani H. K. 10477
Stanoeva E. see Georgieva A. 9399
Stará I. G. see Stary I. 529
Stärk A. see Marzian S. 5299
Stary I. Stará I. G. and Kocovsky P. Palladium(0)-catalyzed allylic substitution with allylic alkoxides as substrates 529
Stavber S. Sotler-Pecan T. and Zupan M. Fluorination with $CsSO_4F$—XXI. Effect of the structure of alkene and alcohol on stereochemistry and relative rate of fluoroalkoxylation 12235
Steel P. J. see Coxon J. M. 13037
Steenkamp J. A. see Rossouw W. 12477
Stefaniak L. see Dodziuk H. 3619
Stefaniak L. see Panfil I. 7219
Stefanovsky Y. N. see Viteva L. Z. 7193
Stemerick D. M. see Edwards M. L. 5579
Sternbach D. D. see McNelis B. J. 6767
Sterner O. see Garlaschelli L. 3571
Sterner O. see Stadler M. 12649
Stevens C. V. see Katritzky A. R. 6005
Stevenson P. J. see Coates B. 4025
Stevenson R. J. see Brenstrum T. J. 4897
Stewart M. see Pelter A. 13829
Stille J. R. see Cook G. R. 4105
Stokoe R. B. see Hogg D. J. P. 7933
Storer N. P. see Pelter A. 10829
Storr R. C. see Barcock R. A. 4149
Strazzolini P. Giumanini A. G. and Verardo G. The reaction between acyl halides and alcohols: alkyl halide versus ester formation 217
Streith J. see Tschamber T. 1135
Strelenko Y. A. Samoshin V. V. Troyansky E. I. Demchuk D. V. Dmitriev D. E. Nikishin G. I. and Zefirov N. S. Conformational analysis of 2,3-disubstituted 1,4-dithianes by NMR spectroscopy and MMX calculations 10107
Strohmeyer T. see Ziegler, Jr C. B. 12085
Struber F. see Kristinsson H. 6825
Strunz G. M. and Finlay H. Concise, efficient new synthesis of pipercide, an insecticidal unsaturated amide from *Piper nigrum*, and related compounds 11113
Suau R. and de Inestrosa Villatoro E. P. On the photochemical reactivity of phthalonimide 4987
Subba Rao G. S. R. see Raghavan S. 2599
Subra G. see Chaouni-Benabdallah A. 12923
Subramanian L. R. see Martínez A. G. 13231
Subrayan R. P. Thurber E. L. and Rasmussen P. G. Synthesis and assignments of regioisomeric cyanoimidazole esters 2641
Suckling C. A. see Husbands S. 9729
Suckling C. J. see Husbands S. 9729
Suemune H. see Kato K. 3315
Sugihara T. see Negishi E. 425
Sugihara Y. Miyatake R. Yagi T. Murata I. Jinguji M. Nakazawa T. and Imamura A. Thienoborepins: conjugation characteristics in boron heterocycles 6495
Sugimura T. Tai A. and Koguro K. Total syntheses of (+)-ipomeamarone and (–)-ngaione via novel intramolecular hydrogen abstraction 11647
Suginome H. Sakurai H. Sasaki A. Takeuchi H. and Kobayashi K. Photoinduced molecular transformations—CLI. One-pot synthesis of 1*H*-benz[*g*]indole-4,5-diones by a regioselective (3+2) photoaddition of 4-amino-1,2-naphthoquinones with alkenes 8293
Suginome H. and Nakayama Y. Photoinduced molecular transformations—CL. A new total synthesis of (±)-α-himachalene based on a sequence involving [2+2] photoaddition and regioselective β-scission of alkoxyl radicals generated from the resulting cyclobutanols 7771
Suginome H. and Senboku H. Photoinduced molecular transformations—CLIV. On the mechanism of the formation of the 5-iodopentyl formate in the photolysis of cyclopentanol hypoiodite in solution in the presence of mercury(II) oxide–iodine 13101

Sugiyama H. Yamashita K. Fujiwara T. and Saito I. Apoprotein-assisted unusual cyclization of neocarzinostatin chromophore 1311
Suhas E. see Agrofoglio L. 10611
Summa V. see Botta M. 3603
Sun X.-L. see Li Y.-L. 10727
Sund C. see Rousse B. 1777
Sund C. see Rousse B. 8711
Sunjic V. see Gelo-Pujic M. 13753
Sunkel C. see Pastor A. 8085
Suresh C. G. see Sakthivel K. 13251
Sureshkumar D. see Ramachandran M. S. 9495
Surico G. see Evidente A. 10371
Sutherland A. G. see Ribbons D. W. 3587
Suwinski J. and Salwinska E. Reactions of 1-arenesulfonyl-4-nitroimidazoles with aniline in aqueous methanol solution 5741
Suzuki A. see Moriya T. 7961
Suzuki H. see Chakravarty A. K. 2865
Suzuki K. see Sasaki H. 11827
Suzuki N. see Uozumi Y. 4293
Suzuki T. see Sasai H. 12313
Suzuki T. see Takahashi K. 1327
Svatoš A. see McCormick K. D. 2365
Swann E. see Cotterill A. S. 7657
Swarts H. J. see Verstegen-Haaksma A. A. 10073
Swarts H. J. see Verstegen-Haaksma A. A. 10095
Swarts H. J. Verstegen-Haaksma A. A. Jansen B. J. M. and de Groot A. Total synthesis of drimane sesquiterpenes from *S*-(+)-carvone—V 10083
Swingle N. M. Reddy K. V. and Rossiter B. E. Enantioselective conjugate addition—V. Synthesis and testing of scalemic tetraamines as chiral cuprate ligands 4455
Sybilska D. see Dodziuk H. 3619
Sypniewski M. see Makosza M. 4913
Szántay C. see Sóti F. 8209
Szechner B. Achmatowicz O. Gałdecki Z. and Fruzinski A. Synthesis and absolute configuration of four diastereoisomeric 1-(2-furyl)-2-aminobutane-1,3-diols 7611
Szilágyi L. see Herczegh P. 13671
Szöllosy Á. see Kádas I. 2895
Sztaricskai F. see Herczegh P. 13671
Szymoniak J. Besançon J. and Moïse C. Pinacol coupling of aliphatic aldehydes promoted by niobium(III) reagent 2841

Tacconi G. see Faita G. 10955
Tadano K. see Takao K. 5681
Taddei A. see Cuenca A. 1927
Taddei F. see Benassi R. 12469
Taddei F. see Benassi R. 4795
Tai A. see Sugimura T. 11647
Tajbakhsh M. see Barton D. H. R. 639
Takada S. see Satoh T. 11839
Takagaki K. see Ishibashi H. 10215
Takagi I. see Takao K. 5681
Takagishi S. see Shi G. 1129
Takahashi H. see Higashiyama K. 1083
Takahashi K. Tanaka T. Suzuki T. and Hirama M. Synthesis and binding of simple neocarzinostatin chromophore analogues to the apoprotein 1327
Takahashi M. see Fusetani N. 7765
Takano K. see Satoh T. 4957
Takao K. Nigawara Y. Nishino E. Takagi I. Maeda K. Tadano K. and Ogawa S. Stereoselective total syntheses of (–)-desoxoprosopinine and (–)-desoxoprosophylline: palladium(0)-catalyzed intramolecular *N*-alkylation for the key piperidine ring formation 5681
Takayama H. Kitajima M. and Sakai S. A biomimetic synthesis of a novel *seco* indole alkaloid, 11-methoxygel-semamide 8363
Takayama H. Kitajima M. and Sakai S. A biomimetic synthesis of a new skeletal *Gelsemium* alkaloid, 11-methoxy-19(*R*)-hydroxygelselegine 11813
Takeda K. Imaoka I. and Yoshii E. Diels–Alder reaction of α-substituted acrylates and α-(methylene)lactones: conformation of dienophiles and *endo*/*exo* selectivity 10839
Takei H. see Asaoka M. 655
Takeshita N. see Hashimoto Y. 8317
Takeuchi H. see Suginome H. 8293
Takeya K. see Morita H. 11613
Takeya K. see Morita H. 12599
Takeya K. see Morita H. 6797
Takeya K. see Morita H. 9975
Talpir R. Rudi A. Kashman Y. Loya Y. and Hizi A. Three new sesquiterpene hydroquinones from marine origin 4179
Tamagawa Y. see Kamata M. 12821
Tamao K. see Toshimitsu A. 8997
Tamura J. see Hiruma K. 12143
Tamura O. see Akiba T. 3905
Tamura O. see Katoh T. 6259
Tamura O. see Saito S. 6193
Tamura O. Hashimoto M. Kobayashi Y. Katoh T. Nakatani K. Kamada M. Hayakawa I. Akiba T. and Terashima S. Synthetic studies on the key component of the new generation of quinolone-carboxylic acid, DU-6859—I. Synthesis of (1*R*,2*S*)-2-fluorocyclopropylamine by the use of optical resolution 3889
Tan C. M. see Poh B.-L. 3453
Tanabe K. see Yamashita T. 9275
Tanaka J. Ogawa N. Liang J. Higa T. deNys R. Bowden B. F. Carroll A. R. Coll J. C. Bernardinelli G. and Jefford C. W. Helioxenicins A–C: diterpenes from the blue coral *Heliopora coerulea* 9989
Tanaka K. see Mátyus P. 2405
Tanaka K. see Saito S. 6209
Tanaka M. Tomioka K. and Koga K. Enantioselective total synthesis of (+)-stoechospermol via stereoselective intramolecular (2+2) photocycloaddition of the chiral butenolide 12829
Tanaka M. Tomioka K. and Koga K. Total synthesis of natural (+)-spatol. Confirmation of the absolute stereostructure 12843
Tanaka S. see McCullough K. J. 7625
Tanaka S. Tatsuta N. Yamashita O. and Isobe M. Ring opening of alkynyl sugars by Nicholas reaction—application to enantioselective synthesis of oxepane subunits of marine *trans*-fused polyether toxins 12883
Tanaka S. and Isobe M. Enantiomeric synthesis of pyran subunits of marine *trans*-fused polyether toxins: epimerization of alkynyl sugars through cobalt complexes 5633
Tanaka T. see Takahashi K. 1327
Tananakin A. P. see Vaganova T. A. 10011

Tanino H. see Inoue S. 2729
Tanino H. see Inoue S. 2753
Tanner D. Andersson P. G. Tedenborg L. and Somfai P. A synthetic approach to the zoanthamine alkaloids 9135
Tanner D. Birgersson C. Gogoll A. and Luthman K. On the use of C_2-symmetric aziridines as chiral auxiliaries 9797
Tanyeli C. see Akhmedov I. M. 2099
Tanzawa K. see Yoda K. 6537
Tao X. L. Cheng J.-F. Nishiyama S. and Yamamura S. Synthetic studies on tetrahydropyrroloquinoline-containing natural products: syntheses of discorhabdin C, batzelline C and isobatzelline C 2017
Taran S. G. see Ukrainets I. V. 10331
Tarantili P. see Spyroudis S. 11541
Tarchini C. see Bauer P. J. 1707
Tardella P. A. see Barani M. 11235
Tardella P. A. see Barani M. 3829
Tárraga A. see Molina P. 10029
Tarzia G. see Balsamini C. 12375
Taskinen E. Relative thermodynamic stabilities of γ-methylene-γ-butyrolactone and α-angelicalactone 1885
Taskinen E. Nuclear magnetic resonance, force field and MNDO studies on 1-methoxy-cycloalkenes 5795
Taskinen E. Combination of ^{17}O and ^{13}C NMR spectra of isomeric allyl and (*Z*)-propenyl ethers with their relative thermodynamic stabilities 7293
Taskinen E. and Nummelin K. Relative thermodynamic stabilities of 3-ethylidenecyclohexenes and isomeric ethylcyclohexadienes 11693
Taticchi A. see Gacs-Baitz E. 10359
Tatsuta N. see Tanaka S. 12883
Tauber A. Y. Kostiainen R. K. and Hynninen P. H. Synthesis of pyropheophytin–anthraquinone linked molecules as models for the study of photoinduced electron transfer 4723
Tavani C. see Dell'Erba C. 11239
Tavani C. see Dell'Erba C. 3529
Tebbe M. J. see Wender P. A. 1419
Tedenborg L. see Tanner D. 9135
Tedesco A. C. Naal R. M. Z. G. Carreiro J. C. and Bonilha J. B. S. Kinetic studies of the nucleophilic quenching of photoexcited nitroaryl ethers (NArE) by bromide ions in cationic micellar solution 3071
Teichmüller G. see Schwarz S. 10709
Tenaglia A. see Heumann A. 539
Teng M. see Guzzo P. R. 8275
Terachi T. see Yamauchi N. 4125
Terada Y. see Hosono F. 13335
Terakado M. Murai K. Miyazawa M. and Yamamoto K. Palladium(0)-catalyzed cyclization–carbonylation of 2,7-octadienyl acetate and homologues 5705
Terashima S. see Akiba T. 3905
Terashima S. see Fukuda Y. 2793
Terashima S. see Fukuda Y. 2809
Terashima S. see Katoh T. 6221
Terashima S. see Katoh T. 6239
Terashima S. see Katoh T. 6259
Terashima S. see Saito S. 6193
Terashima S. see Saito S. 6209
Terashima S. see Tamura O. 3889
Terrett N. K. see Brumwell J. E. 13533
Terrier C. see Alazard J.-P. 6287
Terzis A. see Bojilova A. 13023
Teshima K. see McCullough K. J. 7625
Testaferri L. see Tiecco M. 10549
Thal C. see Alazard J.-P. 6287
Thangarasa R. see Ager D. J. 1975
Thangarasa R. see McIntosh J. M. 1967
Theodorakis E. A. see Barton D. H. R. 639
Thirionet I. see Leclercq S. 8465
Thøgersen H. see Andersen K. E. 8699
Thomas W. A. see Ardill H. 5067
Thompson J. R. see Lamara K. 5515
Thomsen I. see Bach K. K. 7543
Thorn S. N. see Garratt P. J. 12211
Thornton T. J. see Pettit G. R. 12097
Thornton-Pett M. see Frederickson M. 5495
Thummel R. P. see Hung C.-Y. 10685
Thurber E. L. see Subrayan R. P. 2641
Tiecco M. Testaferri L. Tingoli M. Marini F. and Mariggiò S. Electrophilic phenylselenenylation of thiophenes. Synthesis of poly(phenyl-seleno)-thiophenes 10549
Tiekink E. R. T. see Easton C. J. 7327
Tingoli M. see Tiecco M. 10549
Tinto W. F. see Dookran R. 1983
Tirkkonen B. Miettinen J. Salo J. Jokela R. and Lounasmaa M. The Claisen rearrangement in the preparation of geissoschizine isomers 3537
Tius M. A. Makriyannis A. Zou X. L. and Abadji V. Conformationally restricted hybrids of CP-55,940 and HHC: stereoselective synthesis and activity 2671
Tkachev A. V. Denisov A. Yu. Gatilov Y. V. Bagryanskaya I. Yu. Shevtsov A. and Rybalova T. V. Stereochemistry of hydrogen peroxide–acetic acid oxidation of ursolic acid and related compounds 11459
Tkachev A. V. and Denisov A. Yu. Oxidative decarboxylation by hydrogen peroxide and a mercury(II) salt: a simple route to nor-derivatives of acetyloleanolic, acetylursolic and dehydroabietic acids 2591
Tkacz J. S. see Schwartz R. E. 1675
Tochtermann W. Bruhn S. Meints M. und Wolff C. Synthese funktionalisierter Hydroazulene—ein neuer zugang zum Lactaran-Gerüst 9657
Togo H. see Truong-Nguyen T. M. T. 7827
Toke L. see Kádas I. 2895
Toma L. see Garlaschelli L. 1211
Toma Š. see Puciová M. 5765
Tomasini C. see Braschi I. 2955
Tomioka K. see Ando K. 13081
Tomioka K. see Inoue I. 4429
Tomioka K. see Tanaka M. 12829

Tomioka K. see Tanaka M. 12843
Tomlinson G. D. see Hunter R. 871
Tomooka K. Igarashi T. and Nakai T.
[1,2]-Wittig rearrangement of enantio-defined α-alkoxyalkyllithiums: structural requirement and steric course at the Li-bearing terminus 5927
Tona M. Sánchez-Baeza F. and Messeguer A.
A comparative study on the photo-induced arylation of β-dicarbonyl compounds by arylazosulfides and its use in the synthesis of methyl labeled 2-arylpropionic acids 8117
Tonachini G. see Canepa C. 12511
Tonachini G. see Canepa C. 8073
Tonnard F. see Rahmouni M. 12625
Toppet S. see L'abbé G. 7019
Toppet S. see Saleh M. A. 1811
Tormos R. see Jiménez M. C. 7635
Toró A. see Pallagi I. 8809
Torre G. see Forni A. 11995
Torres F. see Luis J. G. 1217
Torssell K. B. G. see Bach K. K. 7543
Tortajada A. see Aurell Mª J. 5109
Toru T. see Kusuda S. 1045
Toscano R. A. see Esquivel B. 11593
Toshimitsu A. Hirosawa C. and Tamao K.
Retention of configuration in the Ritter-type substitution reaction of chiral β-arylthio alcohols through the anchimeric assistance of the arylthio group 8997
Tóth G. see Kádas I. 2895
Tour J. M. see Negishi E. 425
Tournaire C. Hocquaux M. Beck I. Oliveros E. et Maurette M.-T.
Activité anti-oxydante de flavonoïdes: réactivité avec le superoxyde de potassium en phase hétérogène 9303
Townsend C. A. see Mah S. C. 1361
Toyota M. Nishikawa Y. Seishi T. and Fukumoto K.
Aphidicolin synthesis—I. Formal synthesis of (±)-aphidicolin by the successive intramolecular Diels–Alder reactions 10183
Toyota M. Nishikawa Y. and Fukumoto K.
Aphidicolin synthesis—II. An expeditious and efficient formal synthesis of (±)-aphidicolin 11153
Toyota M. Seishi T. Yokoyama M. Fukumoto K. and Kabuto C.
Synthetic approach to stemodin—I. A novel stereocontrolled construction of the stemodane system by the successive intramolecular Diels–Alder reactions 1093
Toyota M. Seishi T. and Fukumoto K.
Stemodin synthesis—II. Highly diastereoselective formal total synthesis of (±)-stemodin via Pd^{2+}-promoted cycloalkenylation reaction 3673
Traeger S. C. see Crews P. 13567
Trendel J. M. see Schaeffer P. 12633
Treskach V. I. see Ukrainets I. V. 10331
Tric B. see Lesuisse D. 8491
Trifilieff S. see Schaeffer P. 12633
Trigalo F. see Litaudon M. 5323
Trimurtulu G. Faulkner D. J. Perry N. B. Ettouati L. Litaudon M. Blunt J. W. Munro M. H. G. and Jameson G. B.
Alkaloids from the Antarctic sponge *Kirkpatrickia varialosa*—II. Variolin A and *N* (3')-methyl tetrahydrovariolin B 3993
Trivedi G. K. see Kodukulla R. P. K. 4623
Trivellone E. see Guo Y. 13261
Trogolo C. see Bosman C. 13847
Trost B. M. see Coppola B. P. 93
Troyansky E. I. see Strelenko Y. A. 10107
Truong-Nguyen T. M. T. Togo H. and Schlosser M.
A fluoroisoprenylation sequence employing 2-fluoroalkenal derived azomethines as key intermediates: a stereocontrolled synthesis of 2-fluorogeraniol and 2-fluorofarnesol 7827
Truscello A. M. see Auricchio S. 7589
Tschamber T. Backenstrass F. Neuburger M. Zehnder M. and Streith J.
Stereoselective catalytic double osmylation of 1,2-dihydropyridines leading to amino-arabinose and to amino-altrose derivatives and to potential glycosidase inhibitors 1135
Tse C.-L. see Barton D. H. R. 639
Tsubono K. see Meselhy M. R. 3081
Tsuchida S. see Aoyagi Y. 13575
Tsuda M. Kawasaki N. and Kobayashi J.
Ircinols A and B, first antipodes of manzamine-related alkaloids from an Okinawan marine sponge 7957
Tsuda M. Sasaki T. and Kobayashi J.
Hymenamides G, H, J and K, four new cyclic octapeptides from the Okinawan marine sponge *Hymeniacidon* sp. 4667
Tsuji J. see Mandai T. 475
Tsukamoto S. Kato H. Hirota H. and Fusetani N.
3,4-Dihydroxystyrene dimers, inducers of larval metamorphosis in ascidians, from a marine sponge *Jaspis* sp. 13583
Tsuruo T. see Kobayashi J. 7401
Tsyganov D. see Desimoni G. 1821
Tu S.-C. see Mager H. I. X. 5287
Tu S.-C. see Mager H. I. X. 6759
Tu Y. see Hanessian S. 77
Tuijp C. J. M. see Udding J. H. 1907
Tullius T. D. see Mah S. C. 1361
Turbanti L. see Pini D. 205
Turchi S. see Nesi R. 9189
Turck A. see Plé N. 10299
Turner R. M. see Saville-Stones E. A. 6695
Turowska-Tyrk I. see Wagner R. W. 11097
Tyagi O. D. see Prasad A. K. 10579
Tyagi O. D. see Prasad A. K. 2231
Tyler L. M. see Marzabadi C. H. 6783
Tyler P. C. see Furneaux R. H. 2131

Uccella N. see Chiacchio U. 6671
Uchida T. see Mikami K 5917
Udding J. H. Papin N. Hiemstra H. and Speckamp W. N.
Copper-catalysed *N*-acyliminium ion cyclisation to 3-azabicyclo[3.3.1]nonanes; synthesis of 2,4-disubstituted 1-aza-adamantanes 8853
Udding J. H. Tuijp C. J. M. Hiemstra H. and Speckamp W. N.
Transition metal-catalyzed chlorine transfer cyclizations of carbon-centered glycine radicals; a novel synthetic

route to cyclic α-amino acids 1907
Ueno Y. see Kusuda S. 1045
Ukrainets I. V. Bezugly P. A. Treskach V. I. Taran S. G. and Gorokhova O. V. Ethyl esters of malonanilic acids. Synthesis and pyrolysis 10331
Ulibarri G. see Audrain H. 1469
Ülkü D. see Dastan A. 10555
Ullenius C. see Nilsson K. 13173
Umeyama A. see Shoji N. 4973
Undeutsch B. see Schwarz S. 10709
Undheim K. see Fischer P. M. 2277
Undheim K. see Sandosham J. 275
Undheim K. see Williams L. 13697
Uozumi Y. Suzuki N. Ogiwara A. and Hayashi T. Preparation of optically active binaphthylmonophosphines (MOP's) containing various functional groups 4293
Urbano A. see Carreño M. C. 5013
Urge L. Jackson D. C. Gorbics L. Wroblewski K. Graczyk G. and Otvos, Jr L. Synthesis and conformational analysis of N-glycopeptides that contain extended sugar chains 2373
Urones J. G. see Marcos I. S. 12655
Urones J. G. Basabe P. Marcos I. S. Jiménez A. Lithgow A. M. López M. Moro R. F. and Gómez A. Ring A functionalized neoclerodane diterpenoids from *Cistus populifolius* 10791
Urones J. G. Marcos I. S. Gómez Pérez B. Díez D. Lithgow A. M. Gómez P. M. Basabe P. and Garrido N. M. Chemistry of zamoranic acid—V. Homochiral semisyntheses of active drimanes: pereniporin B, polygodial and warburganal 10995
Urtiaga M. K. see González-Cameno A. M. 10971
Urwyler S. see Chengzhi C. 5735

Vaganova T. A. Panteleeva E. V. Tananakin A. P. Shteingarts V. D. and Bilkis I. I. Reductive activation of arenes—VII. Alkylation of 9-cyanoanthracene two-electron reduction products in liquid ammonia 10011
Vågberg J. O. see Söderberg B. C. 61
Valencia C. see Avalos M. 3273
Vallet P. see Chaouni-Benabdallah A. 12923
Van Aerschot A. see Augustyns K. 1189
Van Aerschot A. see Pannecouque C. 7231
Van Aken K. J. Lux G. M. Deroover G. G. Meerpoel L. and Hoornaert G. J. The synthesis of 3-functionalized 5-chloro-6-methyl-2*H*-1,4-oxazin-2-ones and of pyridines from cycloaddition–elimination reactions with substituted acetylenic compounds 5211
van Asselt R. and Elsevier C. J. Palladium complexes containing rigid bidentate nitrogen ligands as catalysts for carbon–carbon bond formation 323
van Bekkum H. see Lammers H. 8103
Vandendriessche F. see Pannecouque C. 7231
Vanden Eynde J.-J. D'Orazio R. and Van Haverbeke Y. Potassium permanganate, a versatile reagent for the aromatization of Hantzsch 1,4-dihydropyridines 2479
van der Gen A. see Nieuwenhuis S. A. M. 13207
Vander Meer R. see Leclercq S. 8465
Van Der Schoot M. see Campi E. M. 2533
VanDerveer D. see Grovenstein, Jr E. 5971
Vandewalle M. see Pingli L. 7061
van Echten-Deckert G. see Kolter T. 13425
van Eikema Hommes N. J. R. and von Ragué Schleyer P. Mechanisms of aromatic lithiation. Influence of aggregation and directing groups 5903
Van Haver D. see Zhu G.-D. 7049
Van Haverbeke Y. see Vanden Eynde J.-J. 2479
van Heijenoort J. see Heuer M. 2029
van Heijenoort J. see Marzian S. 5299
van Heijenoort Y. see Heuer M. 2029
van Heijenoort Y. see Marzian S. 5299
Vankar Y. D. Reddy M. V. and Chaudhuri N. C. Chiral acetals in organic synthesis: regioselective synthesis of 2- and 3-hydroxy acetals from 2,3-olefinic acetals. Reinvestigation and further applications 11057
van Koten G. see van Maanen H. L. 11509
van Lier J. E. see Ali H. 11933
van Maanen H. L. Jastrzebski J. T. B. H. Kooijman H. Spek A. L. and van Koten G. Highly functionalized β-enamino esters via C–C coupling reactions of lithium enolates of protected glycine esters and isothiocyanates 11509
Van Meervelt L. Vydzhak R. N. Brovarets V. S. Mishchenko N. I. and Drach B. S. Structure and properties of phosphonium ylides obtained by the reaction of 3-phosphorylated 1,4-dichloro-2-aza-1,3-dienes with sodium azide 1889
van Ravenswaay C. see Gijsen H. J. M. 4733
van Wiltenburg J. see Overkleeft H. S. 4215
Vaquero J. J. see Pastor A. 8085
Vaultier M. see Rasset C. 3397
Vazeux M. see Barillier D. 5413
Veith M. Lorenz M. Boland W. Simon H. and Dettner K. Biosynthesis of iridoid monoterpenes in insects: defensive secretions from larvae of leaf beetles (Coleoptera: Chrysomelidae) 6859
Velázquez S. Jimeno M.-L. Camarasa M.-J. and Balzarini J. Synthesis of [1-[3',5'-bis-*O*-(*tert*-butyldimethylsilyl)-β-D-arabino- and β-D-ribofuranosyl]cytosine]-2'-spiro-5"-(4"-amino-1",2"-oxathiole-2",2"-dioxide). Analogues of the highly specific anti-HIV-1 agent TSAO-T 11013
Velder J. see Blechert S. 9649
Velusamy P. see Pitchumani K. 12979
Velusamy P. see Pitchumani K. 7903
Venanzi L. M. see Wipf P. 1935
Venemalm L. see Estévez C. 7879
Venkatachalam C. S. see Dhanalekshmi S. 6387
Venkata Lakshmi N. see Said M. A. 6989
Venkateswarlu S. see Srikrishna A. 8765
Venkateswarlu S. see Srikrishna A. 8781
Venkateswarlu Y. see Mehta G. 11729
Ventura M. see Bassa J. 8143
Venturelli F. see Confalonieri G. 3235
Venturello P. see Canepa C. 8161

Venturello P. see Prandi C. 12463
Verardo G. see Strazzolini P. 217
Verbist J.-F. see D'Auria M. V. 4829
Verri A. see Botta M. 3603
Versloot P. see Jungk D. 11187
Verstegen-Haaksma A. A. see Swarts H. J. 10083
Verstegen-Haaksma A. A. Swarts H. J. Jansen B. J. M. and de Groot A. *S*-(+)-Carvone as starting material in synthesis—IV. Conjugate addition of cyanide and Grignard nucleophiles followed by annulation to functionalized decalones 10073
Verstegen-Haaksma A. A. Swarts H. J. Jansen B. J. M. and de Groot A. Total synthesis of (–)-Ambrox® from *S*-(+)-carvone—VI 10095
Vertegaal L. B. J. see Nieuwenhuis S. A. M. 13207
Veschambre H. see Besse P. 8885
Viallefont Ph. see Akssira M. 9051
Viani F. see Arnone A. 12361
Viani F. see Arnone A. 13485
Vicente T. see Sotomayor N. 2207
Vid G. Ya. see Raifeld Y. E. 8603
Vidal L. see Pérez J. M. 7923
Vidari G. see Garlaschelli L. 1211
Vidari G. see Garlaschelli L. 3571
Videnova I. see Bojilova A. 13023
Viehe H. G. see De Boeck B. 7075
Vigner D. see Roux M.-C. 8445
Viljoen A. M. see Martins F. J. C. 10783
Villa M.-J. see Sotomayor N. 2207
Villacampa M. Pérez J. M. Avendaño C. and Menéndez J. C. Ultrasound assisted Diels–Alder reactions of 1-azadienes with 'normal' electronic demand 10047
Villaverde M. C. see Estévez J. C. 2107
Villuendas I. Parrilla A. and Guerrero A. An efficient and expeditious synthesis of functionalized trifluoromethyl ketones through lithium–iodine exchange reaction 12673
Vilsmaier E. see Schlag W.-R. 3123
Vilsmaier E. see Seibel J. 715
Vilsmaier E. see Wagemann R. 731
Vinkovic M. see Lazarevski G. 12201
Viswanadham G. see Rousse B. 1777
Viteva L. Z. Gospodova T. S. and Stefanovsky Y. N. Titanium enolates and 'ate' complexes of *N,N*-disubstituted amides and thioamides in the Michael reaction 7193
Viti G. see Cordero F. M. 12713
Vivier L. see Imhaoulène S. 12913
Vivona N. see Frenna V. 7315
Vogel P. see Allemann S. 2469
Vogel P. see Pale P. 8035
Vogel R. see Kiefer M. 7109
von Holleben M. L. A. Zucolotto M. Zini C. A. and Oliveira E. R. A selective reduction of α,β-unsaturated ketones 973
von Ragué Schleyer P. see van Eikema Hommes N. J. R. 5903
von Schnering H. G. see Giacometti A. 7913
von Scholz Y. see Csuk R. 10431
Vorbrüggen H. and Krolikiewicz K. The introduction of nitrile groups into heterocycles and conversion of carboxylic groups into their corresponding nitriles with chlorosulfonylisocyanate and triethylamine 6549
Voyer N. and Guérin B. Design and synthesis of novel peptides bearing a host and a guest side chains 989
Vuilhorgne M. see Commerçon A. 10289
Vuilhorgne M. see Largeron M. 6307
Vulpetti A. see Gennari C. 8815
Vyas D. M. see Kadow J. F. 1519
Vydzhak R. N. see Van Meervelt L. 1889

Waagen V. Barua T. K. Anthonsen H. W. Hansen L. K. Fossli D.-J. Hough E. and Anthonsen T. Dihydroxyacetone dimers; solution and crystal structure of stereoisomers of 2,5-diethoxy-1,4-dioxane-2,5-dimethanol 10055
Wadsworth D. J. and Losch S. A short synthesis of the aromatic monoterpene espintanol 8673
Wagemann R. see Seibel J. 715
Wagemann R. Seibel J. Vilsmaier E. and Maas G. Functionalized chloroenamines in aminocyclopropane synthesis—XIV. Aminoannulated cyclopropanes—rigid building blocks for oligoamines 731
Wagner R. W. see Lindsey J. S. 8941
Wagner R. W. Lindsey J. S. Turowska-Tyrk I. and Scheidt W. R. Synthesis of porphyrins tailored with eight facially-encumbering groups. An approach to solid-state light-harvesting complexes 11097
Wagner U. see Marzian S. 5299
Wakselman M. see Šavrda J. 5309
Walavalkar R. see Pearson W. H. 12293
Waldmann H. Schmidt G. Jansen M. and Geb J. Asymmetric steering of the Pictet–Spengler reaction by means of amino acid esters as chiral auxiliary groups 11865
Walker G. see Forrest A. K. 10739
Walker S. L. Andreotti A. H. and Kahne D. E. NMR Characterization of calichearmicin γ_1^I bound to DNA 1351
Wallace T. W. see Coutts S. J. 11755
Wallis J. D. see Ozturk T. 11205
Walter D. S. see Hunter R. 9365
Walter D. S. see Hunter R. 9377
Walter R. see Bringmann G. 9643
Wang D.-C. see Sha C.-K. 7495
Wang H. see Koshima H. 13617
Wang J. and Scott A. I. Synthesis of the 2-fluoro-11-hydroxy analog of porphobilinogen, a new suicide inhibitor of the enzyme porphobilinogen deaminase 6181
Wang J.-S. Zhang H.-Z. Huang W.-Y. and Jiang X.-K. Synthesis and properties of two tetrapus host molecules with fluorinated chains 10459
Wang L.-C. see Xu J.-H. 1199
Wang R. see Koshima H. 13617
Wang T.-L. see Barton D. H. R. 1011
Wang T.-L. see Hung C.-Y. 10685
Wang X. see Barnhart R. W. 4335
Wang Y. M. see Seebach D. 4363

Wang Y. see Koshima H. 13617
Wang Y. see Yang C.-H. 12133
Wanner K. Th. and Paintner F. F.
Asymmetric electrophilic α-amidoalkylation—X. A new camphorimide derived chiral auxiliary for the asymmetric synthesis with *N*-acyliminium ions—preparation of aracemic 2-substituted piperidines 3113
Ward J. see Börner A. 10419
Ward R. S. see Pelter A. 10829
Wardkhan W. W. see Mohareb R. M. 5807
Wareing J. R. see Jewell, Jr C. F. 3849
Wartski L. see Roux M.-C. 8445
Watanabe I. see Nakamura T. 11821
Watanabe M. see Niwa H. 6805
Watanabe M. see Niwa H. 7385
Watanabe Y. Nakamoto C. Yamamoto T. and Ozaki S.
Glycosylation using glycosyl phosphite as a glycosyl donor 6523
Watson S. P. see Middlemiss D. 13049
Watson W. H. see Aleksandrov A. M. 8597
Watson W. H. see Coxon J. M. 13037
Wawrzenczyk C. see Nobilec E. 10339
Weavers R. T. see Bandarage U. K. 3463
Weavers R. T. see Haaima G. 2161
Weavers R. T. see Haaima G. 3557
Weber B. and Seebach D.
Highly enantioselective addition of primary alkyl Grignard reagents to carbocyclic and heterocyclic arylketones in the presence of magnesium TADDOLate—preparative and mechanistic aspects 6117
Weber B. and Seebach D.
Ti-TADDOLate-catalyzed, highly enantioselective addition of alkyl- and aryltitanium derivatives to aldehydes 7473
Weber G. see Schwarz S. 10709
Weber M. see Albrecht K. 383
Weber M. see Mahato S. B. 10803
Wee A. G. and Liu B.
The Nafion-H catalysed cyclization of α-carbomethoxy-α-diazoacetanilides. Synthesis of 3-unsubstituted-2-indolinones 609
Wegner K. see Boteju L. W. 2391
Wei Z.-Y. and Knaus E. E.
Asymmetric synthesis of both enantiomers of vigabatrin®: an approach using methionine as the chiral pool 5569
Weintraub P. M. see Farr R. A. 1033
Welch N. see Krysan D. J. 6163
Wells C. H. see Bergman J. S. 11527
Welzel P. see Heuer M. 2029
Welzel P. see Jordine G. 139
Welzel P. see Jordine G. 4037
Welzel P. see Marzian S. 5299
Welzel P. see Schröer J. 6839
Wender P. A. and Tebbe M. J.
The synthesis and chemistry of a simplified, functional analogue of neocarzinostatin chromophore: identification of an intramolecular 1,5-hydrogen atom transfer relevant to the mechanism and cleavage selectivity of diyl-based DNA cleaving agents 1419
Wengel J. see Prasad A. K. 10579
Wengel J. see Prasad A. K. 2231
Wennerström O. see Skog K. 8227
Wentrup C. see Rühmann A. 3785
Wessels P. L. see Martins F. J. C. 10783
Westwood R. see Miller D. J. 5159
Whall L. A. see Constable E. C. 7799
Whelan J. see Barnhart R. W. 4335
White A. H. see Pyne S. G. 941
Whiting D. A. see Buckley G. M. 11781
Widdowson D. A. see Hodson H. F. 1899
Wiechert R. see Bull J. R. 6363
Wieczorek M. W. see Mikołajczyk M. 8053
Wieczorek W. see Pietrusiewicz K. M. 573
Wijnberg J. B. P. A. see Gijsen H. J. M. 4733
Wijnberg J. B. P. A. see Gijsen H. J. M. 4745
Wijnberg J. B. P. A. see Minnaard A. J. 4755
Williams D. J. see Hodson H. F. 1899
Williams D. J. see Kohnke F. H. 9113
Williams H. L. see Bertucco A. 8237
Williams J. M. J. see Allen J. V. 799
Williams L. Booth S. E. and Undheim K.
An approach to α-substituted amines 13697
Wilson K. E. see Schwartz R. E. 1675
Winchester B. see Lundt I. 7513
Winkler T. see Kristinsson H. 6825
Winkler T. see Loubinoux B. 2047
Winter G. see Bock M. 13125
Wipf P. Xu W. Smitrovich J. H. Lehmann R. and Venanzi L. M.
Copper-catalyzed conjugate additions of organozirconocenes. Synthetic and mechanistic studies 1935
Wittman M. D. see Kadow J. F. 1519
Wolff C. see Tochtermann W. 9657
Woller K. R. see Dussault P. H. 8929
Wong H. N. C. see Yang Y. 9583
Woods M. see Boons G.-J. 7157
Wrigglesworth R. see Garratt P. J. 12211
Wright A. D. see König G. M. 8011
Wright G. E. see Gambino J. 11363
Wroblewski K. see Urge L. 2373
Wu G. see Negishi E. 425
Wu M.-J. and Yeh J.-Y.
Conjugate addition of allylsilanes to α,β-unsaturated *N*-acyloxazolidinones 1073
Wu S. see O'Donnell M. J. 4507
Wu S.-H. see Jiang X.-K. 7503
Wu Y. see Mikami K. 5917
Wu Y.-L. see Li Y.-L. 10727
Wu Y.-L. see Ye B. 9061
Wu Y. J. see Huo S. Q. 10467
Wünsch B. Zott M. and Höfner G.
Benzomorphan analogous CNS agents: synthesis of homochiral epoxybenzocyclooctenamines 8003
Wyatt P. B. see Abrahams I. 12755
Wyrzykiewicz T. K. see Ravikumar V. T. 9255

Xi Z. Rong J. and Chattopadhyaya J.
Diastereospecific synthesis of 2'- or 3'-*C*-branched nucleosides through intramolecular free-radical capture by silicon-tethered acetylene 5255
Xiao Z. see Yu S.-S. 11601
Xu J.-H. Song Y.-L. Zhang Z.-G. Wang L.-C. Xu J.-W.
Photoinduced addition reactions of chloranil with alkenes—factors influencing the reaction site 1199
Xu J.-W. see Xu J.-H. 1199
Xu S.-C. see McCormick K. D. 2365
Xu W. see Wipf P. 1935

Yagi T. see Sugihara Y. 6495
Yagupolskii L. M. see Garlyauskajte R. Yu. 6891
Yamada H. see Hatakeyama S. 13369
Yamada H. see Nakamura T. 11821
Yamada K. see Ishiwata H. 12853
Yamada K. see Katoh T. 6259
Yamada K. see Niwa H. 6805
Yamada K. see Niwa H. 7385
Yamada Y. M. A. see Sasai H. 12313
Yamada Y. see Mizuno K. 10849
Yamada Y. see Nagaoka H. 661
Yamaguchi S. see Yoshikawa M. 9961
Yamaguchi Y. see Kristinsson H. 6825
Yamakawa K. see Satoh T. 11839
Yamakawa K. see Satoh T. 4957
Yamamoto H. see Hattori K. 3099
Yamamoto H. see Gao Q. 979
Yamamoto H. see Hattori K. 2785
Yamamoto H. see Maruoka K. 3663
Yamamoto H. see Maruoka K. 8983
Yamamoto H. see Ooi T. 6505
Yamamoto H. see Yanagisawa A. 6017
Yamamoto K. see Terakado M. 5705
Yamamoto T. see Watanabe Y. 6523
Yamamoto Y. Ohno M. and Eguchi S.
Ring transformation of 4-acylmethyl-2-chloro-4-hydroxy-2-cyclobutenone to γ-acylmethylenetetronate by thermal rearrangement: new synthetic aspect of squaric acid as a C_4-synthon 7783
Yamamura S. see Hosono F. 13335
Yamamura S. see Izawa T. 13593
Yamamura S. see Tao X. L. 2017
Yamanaka H. see Kondo Y. 11803
Yamani Y. see Satoh T. 11839
Yamashita K. see Sugiyama H. 1311
Yamashita O. see Tanaka S. 12883
Yamashita T. Yasuda M. Isami T. Tanabe K. and Shima K.
Photoinduced nucleophilic addition of ammonia and alkylamines to methoxy-substituted styrene derivatives 9275
Yamashita Y. see Noda K. 9609
Yamauchi N. Terachi T. Eguchi T. and Kakinuma K.
Mechanistic and stereochemical studies on Ferrier reaction by means of chirally deuterated glucose 4125
Yanagisawa A. Nomura N. and Yamamoto H.
Transition metal-catalyzed substitution reaction of allylic phosphates with Grignard reagents 6017
Yang C. Qamar R. Norton S. J. Cook P. F. and Minter D. E.
Synthesis and separation of a diastereomeric pair of phosphonopeptide inhibitors of the cyclic AMP-dependent protein kinase catalytic subunit 1919
Yang C.-H. Lee L.-T. Yang J.-H. Wang Y. and Lee G.-H.
Spiropyrazolines from tandem reaction of azides and alkyl vinyl ketones 12133
Yang H. see Larock R. C. 305
Yang J.-H. see Yang C.-H. 12133
Yang K. see Yerxa B. R. 6173
Yang T.-F. see Gambino J. 11363
Yang Y. and Wong H. N. C.
Regiospecific synthesis of 3,4-disubstituted furans and 3-substituted furans using 3,4-bis(tri-*n*-butylstannyl)furan and 3-(tri-*n*-butylstannyl)furan as building blocks 9583
Yang Z.-Y. see Burton D. J. 2993
Yao Q. see Crich D. 12305
Yao X. see Koshima H. 13617
Yasuda M. see Yamashita T. 9275
Ye B. Qiao L.-X. Zhang Y.-B. and Wu Y.-L.
Tandem syntheses of cyclohexane derivatives via sequential Michael–Michael–Aldol reaction 9061
Ye M. Logaraj S. Jackman L. M. Hillegass K. Hirsh K. A. Bollinger A. M. Grosz A. L. and Mani V.
Enantioselective addition of alkyllithium reagents to aldehydes induced by chiral lithium alkoxides 6109
Yeh J.-Y. see Wu M.-J. 1073
Yerxa B. R. Yang K. and Moore H. W.
Synthesis of (±)-septicine 6173
Yeung B. K. S. Hamann M. T. Scheuer P. J. and Kelly-Borges M.
Hapaioside: a 19-norpregnane glycoside from the sponge *Cribrochalina olemda* 12593
Yeung Lam Ko Y. Y. C. see Rahmouni M. 12625
Yezeguelian C. see Bienaymé H. 3389
Yoda K. Haruyama H. Kuwano H. Hamano K. and Tanzawa K.
Conformational analysis of a new cyclic depsipeptide calcium blocker, leualacin, by NMR spectroscopy 6537
Yokokawa Y. see Yoshikawa M. 9619
Yokokawa Y. see Yoshikawa M. 9961
Yokota N. see Ichikawa J. 11637
Yokoyama M. see Toyota M. 1093
Yonemochi S. see Sato T. 7375
Yoshida N. see Kobayashi J. 7401
Yoshida Z. see Dodziuk H. 3619
Yoshiga T. see Hayashi M. 2821
Yoshii E. see Takeda K. 10839
Yoshikawa K. see Shoji N. 4973
Yoshikawa M. Murakami N. Yokokawa Y. Inoue Y. Kuroda Y. and Kitagawa I.
Stereoselective conversion of D-glucuronolactone into pseudo-sugar: syntheses of pseudo-α-D-glucopyranose, pseudo-β-D-glucopyranose and validamine 9619
Yoshikawa M. Yokokawa Y. Inoue Y. Yamaguchi S. Murakami N. and Kitagawa I.
Facile syntheses of pseudo-α-D-arabinofuranose, and two pseudo-D-arabinofuranosyl-nucleosides, (+)-cyclaradine and (+)-1-pseudo-β-D-arabinofuranosyluracil, from D-arabinose 9961
Yoshimura J. see Hiruma K. 12143
Yoshimura Y. see Iino T. 10397
Yoshino T. see Katoh T. 6259
Younes M. I. see Aly M. F. 3159
Young J. H. see Barcock R. A. 4149
Yu F. see Nakamura T. 11821
Yu H. see Curran D. P. 7343
Yu J.-Q. see Zhang H.-Y. 11339
Yu S.-S. Xiao Z. Cai P. Jiang T.-Y. and Snyder J. K.
A new triterpenoid saponin from the Chinese traditional medicine *Northopanax davidii* Harms (Araliaceae) 11601
Yu Z. see Castells J. 13765
Yuan H. Z. see Huo S. Q. 10467
Yue C. Nicolay J.-F. Royer J. and Husson H.-P.

A new stereoselective synthesis of ladybug defence alkaloid precoccinelline 3139
Yum E. K. see Larock R. C. 305
Yun B.-S. Hidaka T. Furihata K. and Seto H. Thiotipin, a novel thiopeptide with a *tipA* promoter inducing activity produced by *Streptomyces* sp. DT31 11659
Yus M. see Almena J. 5775
Yus M. see Bachki A. 5139
Yus M. see Foubelo F. 5131
Yus M. see Foubelo F. 6715
Yus M. see Gil J. F. 3437
Yus M. see Gil J. F. 7307
Yus M. see Guijarro A. 13269
Yus M. see Guijarro A. 7857
Yus M. see Guijarro D. 3427
Yus M. see Guijarro D. 3447
Yus M. see Guijarro D. 8551

Zaitsev V. G. Polozov G. I. and Lakhvich F. A. Synthesis of 2-acyl-4-hydroxycyclohexane-1,3-diones, kairomones and defensive compounds of some insects 6377
Zambianchi M. see Barbarella G. 11249
Zamojski A. see Pakulski Z. 2975
Zampella A. see D'Auria M. V. 4829
Zamponi A. see Enders D. 3349
Zanirato V. see Barco A. 10491
Zanirato V. see Barco A. 11743
Zanirato V. see Barco A. 2583
Zaragoza F. see Coxon J. M. 13037
Zaragoza F. see Marchand A. P. 1687
Zard S. Z. see Boivin J. 1745
Zard S. Z. see Boivin J. 1757
Zard S. Z. see Boivin J. 1769
Zdravkovski Z. see Jursic B. S. 10379
Zefirov N. S. see Strelenko Y. A. 10107
Zehnder M. see Damm W. 7029
Zehnder M. see Tschamber T. 1135
Zelenin A. K. see Zelenin K. N. 11447
Zelenin K. N. Bezhan I. P. Ershov B. A. and Zelenin A. K. Sodium salts of acylhydrazones of 1,3-dioxocompounds and their acylation 11447
Zhang B. see Cohen T. 11569
Zhang H. Shigemori H. Ishibashi M. Kosaka T. Pettit G. R. Kamano Y. and Kobayashi J. Convolutamides A–F, novel γ-lactam alkaloids from the marine bryozoan *Amathia convoluta* 10201
Zhang H.-Y. Yu J.-Q. and Bruice T. C. Synthesis of a spheroidal bis-porphyrin: a ligand designed to accept two catalytic metal ions in an isolated environment 11339
Zhang H.-Z. see Wang J.-S. 10459
Zhang Q. see Gawley R. E. 6077
Zhang W. Hua Y. Geib S. J. Hoge G. and Dowd P. Stereoselective allylation of dichlorocyclobutanones and sequential ring expansions: construction of *cis*-fused cycloheptanones 12579
Zhang Y. see Negishi E. 425
Zhang Y.-B. see Ye B. 9061
Zhang Z.-G. see Xu J.-H. 1199
Zhi B. see Ager D. J. 1975
Zhou Q.-L. and Pfaltz A. Chiral mercaptoaryl-oxazolines as ligands in enantioselective copper-catalyzed 1,4-additions of Grignard reagents to enones 4467
Zhu G.-D. Van Haver D. Jurriaans H. and De Clercq P. J. 11-Fluoro-1α-hydroxyvitamin D_3: the quest for experimental evidence of the folded vitamin D conformation 7049
Zhu J. Klunder A. J. H. and Zwanenburg B. Total synthesis of (–)-kjelmanianone from tricyclodecadienone. A revision of its absolute configuration 10597
Ziegler, Jr C. B. Curran W. V. Feigelson G. B. Bitha P. Fabio P. Strohmeyer T. Short K. and Lin Y. An intramolecular addition–elimination strategy for the synthesis of carbapenems 12085
Zilberg L. L. see Raifeld Y. E. 8603
Zimmer R. Grassberger M. A. Baumann K. Schulz G. and Haidl E. Synthetic modifications of ascomycin—I. A chemoselective removal of the cyclohexyl residue of ascomycin 13655
Zini C. A. see von Holleben M. L. A. 973
Zink D. L. see Schwartz R. E. 1675
Zohdi H. F. see Mohareb R. M. 5807
Zoltewicz J. A. see Prokai-Tatrai K. 9909
Zope A. see Marchand A. P. 1687
Zope U. R. see Coxon J. M. 13037
Zott M. see Wünsch B. 8003
Zou X. L. see Tius M. A. 2671
Zubía E. Ortega M. J. Carballo J. L. and Salvá J. Sesquiterpene hydroquinones from the sponge *Reniera mucosa* 8153
Zucolotto M. see von Holleben M. L. A. 973
Zupan M. see Stavber S. 12235
Zwanenburg B. see Dols P. P. M. A. 3473
Zwanenburg B. see Dols P. P. M. A. 8515
Zwanenburg B. see Zhu J. 10597